THE BUILDER
A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

VOL. CXLIX. NOVEMBER 22 1935 No 4812

From a Pencil Sketch by MR. VINCENT WARRILOW.

MEETINGS

FRIDAY, *November* 22.

Architecture Club. Twenty-fifth Dinner: the Rt. Hon. Herbert Morrison on "Replanning London." At the Savoy Hotel, W.C.2. 7.45 p.m.

Incorporated Association of Architects and Surveyors. Tenth Anniversary Dinner. Dorchester Hotel, W.1. 7 p.m.

Auctioneers' and Estate Agents' Institute. Mr. Gordon G. Fairbairn on "Recent Decisions under Agricultural Law." 3 p.m.

Central Council for Health Education. Eighth Annual Conference on Health Education. At the London School of Hygiene and Tropical Medicine, Keppel-street, W.C.1.

Institution of Structural Engineers (Midland Counties Branch). Mr. H. W. Coultas on "Concrete." At the James Watt Memorial Institute, Birmingham. 6.30 p.m.

Institution of Heating and Ventilating Engineers (London and District Branch). Mr. W. L. Kilburn on "Bronze Welding of Copper Piping." At the Borough Polytechnic, S.E.1. 7 p.m.

SATURDAY, *November* 23.

Incorporated Association of Architects and Surveyors. Annual General Meeting. At 43, Grosvenor-place, S.W.1. 2.30 p.m.

MONDAY, *November* 25.

Royal Society of Arts. Mr. Bernard Smith on "Geological Aspects of Underground Water Supplies." 8 p.m.

Goldsmiths' Company's Lecture. Mr. R. S. Hutton on "Working the Metals." 7 p.m.

Institute of Welding (North-Eastern (Tees-side) Branch). Mr. A. G. Akester on "The Effect of Welding on Scantlings of Ships and other Problems." At the Cleveland Institute, Middlesbrough. 7.30 p.m.

TUESDAY, *November* 26.

Architectural Association. Mr. E. H. B. Boulton on "The Growth, Structure and General Properties of Wood." 8.15 p.m.

Institution of Structural Engineers (South Wales and Monmouthshire Branch). Ordinary Meeting. At the Baltic Lounge, Swansea. 7 p.m.

Welsh School of Architecture and the Cardiff E.C. Mr. R. O. Sutherland on "The Lighting Factor in Architectural Design." At Room 113, Technical College, Cardiff. 5 p.m.

WEDNESDAY, *November* 27.

London Committee of the Empire Exhibition, South Africa, 1936. Luncheon to meet Major C. C. Frye, Chairman. At the Carlton Hotel, S.W.1. 1.15 p.m.

Incorporated Institute of British Decorators. Mr. L. Carr on "Imitation of Woods." At Leeds.

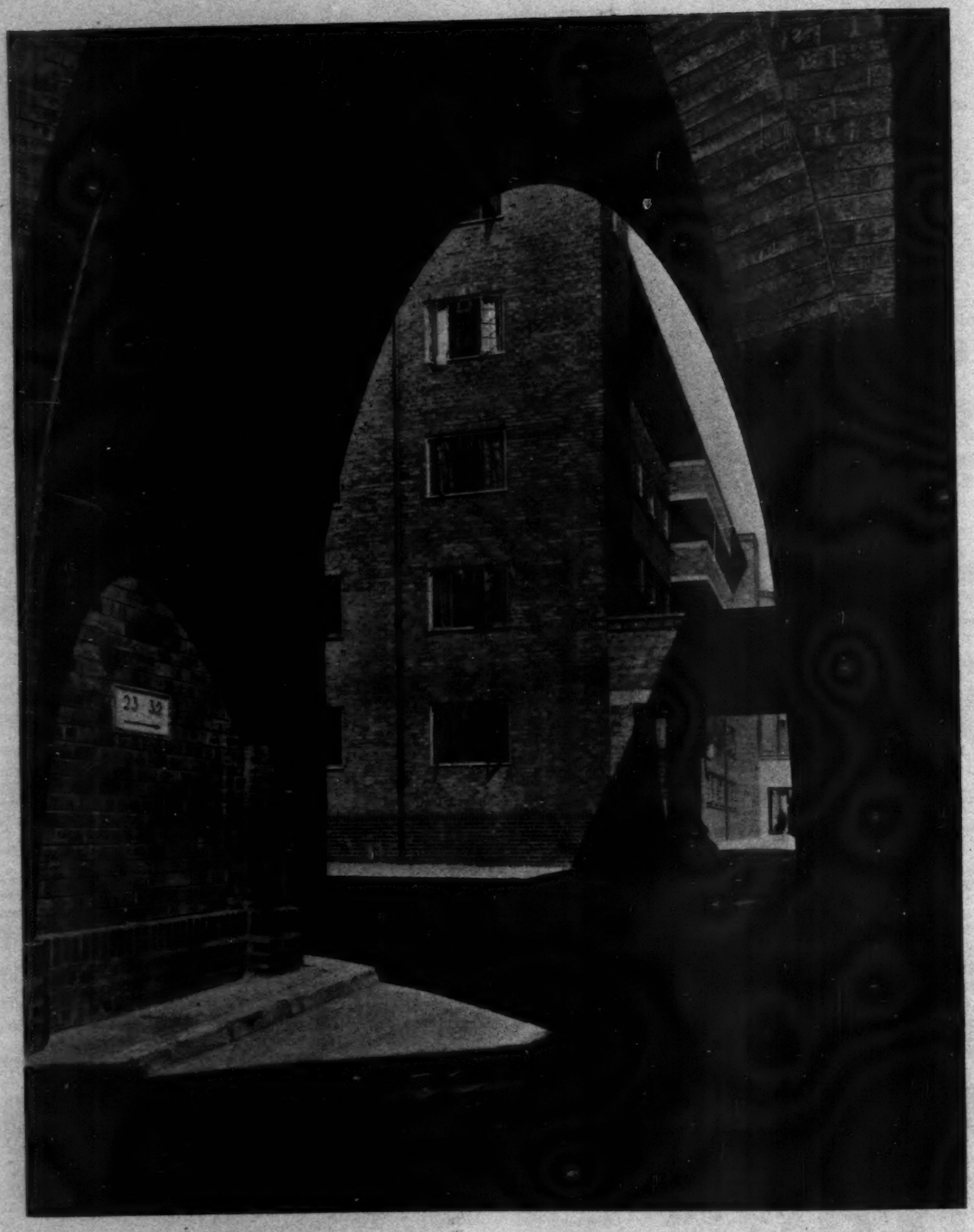
Institute of Welding (North-Western Branch). Mr. J. A. Ashworth on "Welding Jigs and Fixtures." At the College of Technology, Manchester. 7.30 p.m.

THURSDAY, *November* 28.

Institution of Structural Engineers. Mr. A. N. C. Shelley on "The Control of Building by Public Authorities." 6.30 p.m

L.C.C. Geffrye Museum. Mr. James Rudd on "Furniture: English Furniture of the Mahogany Period." 7.30 p.m.

Society of Antiquaries. Mr. T. D. Kendrick and Miss E. Senior on "St. Manchan's Shrine: a Twelfth-century Irish Reliquary." 8.30 p.m.



ST. ANDREW'S GARDENS RE-DEVELOPMENT SCHEME, LIVERPOOL: View through Entrance Archway.

MR. L. H. KEAY F.R.I.B.A., Director of Housing, Liverpool.

(See page 923.)

TIMBER IN BUILDING

THE claim that this is a concrete age in building is less often heard at the present time than was the case a few years ago, when the very name of concrete appeared to have a sort of fascination for the modernist. A somewhat different outlook to-day has driven the technician back to the use of traditional materials in construction, and although the return is perhaps not exactly to the point where the technical mind left matters for fresh adventures, it is clear that the limitations of a traditional material are not to be accepted as a reason for exchange for those of a new one. We are, in fact, still very conscious of the risks and defects which were ever present in the building which includes timber as one of its component parts. Shrinkage and rot continue as the prime bugbears of timber construction, and the angle of approach now seems to be not so much towards the elimination of timber on account of these defects, as towards the elimination of the defects themselves.

Shrinkage itself has been at all times a recognised characteristic of the material, and the architectural design of timber work has developed to a great extent expressly out of contrivances to overcome this characteristic. The framing of such work and the covering of movement with mouldings, and the size of the members which together give the character of traditional work, have directly arisen out of a knowledge of shrinkage. On the other hand, many of those obvious defects which prevail in the buildings of to-day, particularly of the cheaper class, arise out of a neglect of these known facts, either by a disinclination to aim at perfection or by ignorance on the part of the individual craftsman.

Modern designers also have tended to attain a fresh note in their work in defiance of natural laws, and their desires have been more frequently satisfied by the efforts of the manufacturer to meet this desire than by the ingenuity of the designers themselves. The smooth, unbroken effect which has been adopted rather rashly is not natural to timber construction. The designer has rather started with the ideal of streamlining with no other purpose than to copy the motor-car and the aeroplane, instead of with a desire to make sensible use of the materials to his hand. It is rare indeed that the building art thrives under such a topsy-turvy inspiration, and we shall not look for unlimited advance along these lines.

The manufacturer, however, has responded to these desires with the veneered plywood product which provides a material with a beautiful figured surface which, so far as our limited experience goes, is immune from those limiting defects of shrinking and warping. We say within our limited experience, because we have no test available that will compare with that of the joinery and panelling which still stands in a state of perfection in many buildings three or four hundred years old; and it would be interesting to know whether the nature of timber is affected by these mechanical means, and if the continual working one way and another of contrasting layers of grain may produce defects over a long period of years. If these fears are groundless, then it is true that we need no longer fear the large unbroken wood surface, nor need we contrive to so cover its joints that shrinkage no longer disfigures. For ourselves, we prefer to stand upon the safer ground which history has taught us, knowing that skilful craftsmanship can overcome all the disabilities which apply to wood, if we recognise these disabilities as the subject of strict limitations. For this purpose we need our young craftsmen to be fully trained in the right method and knowledge, and there is no doubt that science has placed in our hands more exact knowledge of fact than the ancient craftsman possessed as the result of slowly acquired experiences.

The report of the Forest Products Research Board for the year 1934* is a publication which could not have been compiled without the resources and knowledge of modern science, and within its covers is a fund of nearly exact knowledge which the ancient craftsman had not at his disposal. Exact information as to a moisture content as distinct from sap content is there, and an illuminating sidelight upon the nature of building timber. The passages upon dry rot are also of the utmost value. We feel sure that along such lines of research we shall do much to obviate those superficial defects which post-War economy has tended to mark as inevitable in the material. Afforestation has been a neglected subject for many generations, and it is satisfactory to know that this neglect is ending, and that we have not so far lost our social conscience as to be indifferent to the resources that should be at hand several generations ahead.

There is some curiosity in the trade as to the permanent qualities of the coarser-grained Empire timber which we are now encouraged to buy. The old-fashioned craftsmen, more used to the compact perfection of the timbers from Scandinavia and the Baltic ports, treat this timber with considerable suspicion. Those of us who try to think without prejudice, but have some misgivings as to the possible disturbance of a timber structure that may be subject to greater shrinkage on account of the open grain of the wood, recognise at the same time that there must be some virtue of strength in a straight uninterrupted grain with an absence of disturbing knots. This is a question which must be taken up seriously before experimental risks have been taken on too wide a scale.

We are inclined to think, therefore, that the future of research in the field of timber construction will tend towards a direct attack upon known defects. It may be that we shall find a way to impregnate the grain of seasoned timber so as to seal its pores against the tendency to absorb and give off alternately air moisture, which is the cause and origin of shrinking, swelling and warping. At the same time, such impregnation might be designed to cancel the risks of infection by fungoid growths. At such a stage the design and traditions of timber framing might then develop a radical change which the architect should bear in mind. With such a change we should have more sympathy than with that which has arisen out of a desire to achieve an effect which is unrelated to the contemporary conditions of the building material in use.

We commend to our architect readers this extremely instructive publication, and further we commend to them a close and continued interest in the experimental work which is being carried out for the purpose of making us more closely intimate with the nature and limitations of the materials we continue to use extensively in our buildings to-day. Particularly we commend this notice to those who have somewhat hurriedly adopted a revolution in architectural expression in the hope that our scientists can provide the means of achieving it, but who have reverted to older methods in the new disguise and suffered accordingly.

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* Department of Scientific and Industrial Research: Report of the Forest Products Research Board, with the report of the Director of Forest Products Research for the year 1934. London: Published by His Majesty's Stationery Office, 1935. Price 1s. 6d. net.

NOTES

Broadcasting Architecture.

The Royal Institute of the Architects of Ireland is to be congratulated upon its enterprise in arranging a series of seven talks of fifteen minutes each in which architecture was treated in a popular way by well-known architects. These were transmitted from the Athlone-Dublin-Cork stations at eight o'clock on successive Mondays. The President of the Irish Institute, Mr. H. Allberry, opened the series with an introductory talk; Professor R. M. Butler then dealt with "The Architect and his Training"; Mr. J. J. Robinson spoke of "The Architect and his Client"; Mr. Vincent Kelly's contribution concerned "The Architect and the Contractor"; "The Architect as Town Planner" was allocated to Mr. Manning Robertson; Mr. Pugin Meldon described "The New Architecture"; and the series concluded last Monday with a talk on the use of native materials by Mr. H. H. Hill. It is customary to suppose that few people listen to talks; experience in the Free State does not confirm this view, and the talks appear to have been much appreciated. This very desirable form of propaganda might well be made more use of over here.

The Building Research Board.

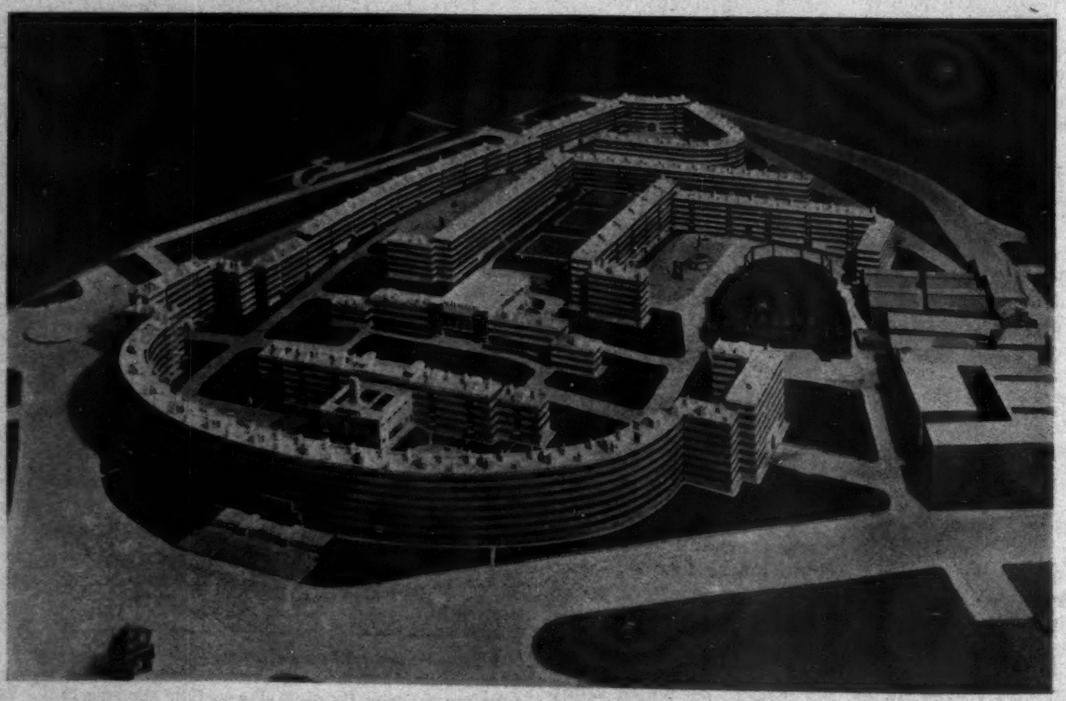
We note from the Report of the Building Research Board for 1934, just issued, that a steady advance has been made in all departments of the Station's work. Once more there has been a marked increase in the number of special investigations undertaken and inquiries dealt with. "This," says Sir Raymond Unwin, in his introduction, "is a branch of our activities to the development of which we attach great importance as it constitutes our most intimate link with day-to-day conditions in the building industry." Special mention is made of an ingenious and useful method that has been developed for measuring the stresses in masonry. This new instrument of research, it is stated, will make it possible to study with exactitude the hitherto obscure distribution of the stresses set up in older masonry structures by the loads imposed under modern conditions. We propose to notice the Report more fully in our next issue.

The Paris Exhibition, 1937.

As the result of a conference in Paris last week, it is now certain that Great Britain will be represented at the "Art and Technique in Modern Life" Exhibition, to be held in Paris in 1937. This Exhibition (preliminary details of which have already appeared in this Journal) will be in Schedule 2—by which is meant that the pavilions for each foreign country represented will be erected by, and at the expense of, the French Government, but that each individual country will be able, if it so desires, to decorate the façade and interior. As will be observed, the title of the Exhibition is fairly comprehensive, but it is understood that the general format of the British exhibits will follow fairly closely those at the Burlington House Exhibition of Industrial Art, and will, in fact, be arranged by the Council for Art and Industry. The general organisation of the British Pavilion will, as usual, be in the hands of the Department of Overseas Trade, which has yet to decide whether or no it will exercise its option to design the decoration. In view of this, the Department has not yet engaged an architect for the work.

Housing and Re-Development.

The paper on "Housing and the Redevelopment of Central Areas," read by Mr. L. H. Keay, O.B.E., F.R.I.B.A., Director of Housing of the City of Liverpool, at Monday's meeting of the R.I.B.A., although it dealt mainly with the excellent work which has been, and is being, carried out in Liverpool, offered a broad survey of the general problem, which should be of considerable value in affording guidance to other authorities and their architects who may have to deal with the redevelopment of overcrowded and unhealthy central areas. Mr. Keay is, we believe, right in his view that it is useless to attempt rebuilding on small isolated sites. The huddle of narrow, ill-planned streets of small semi-derelict houses found in so many of our great towns and cities—the legacy of early nineteenth-century industrial development—will have to be swept away completely, and great areas replanned and rebuilt on generous lines, in accordance with modern standards of accommodation and amenity and the needs of modern transport. If this work is not done properly now, when the conditions are favourable, we shall only bequeath to a later generation problems no less difficult than those with which we are ourselves confronted.

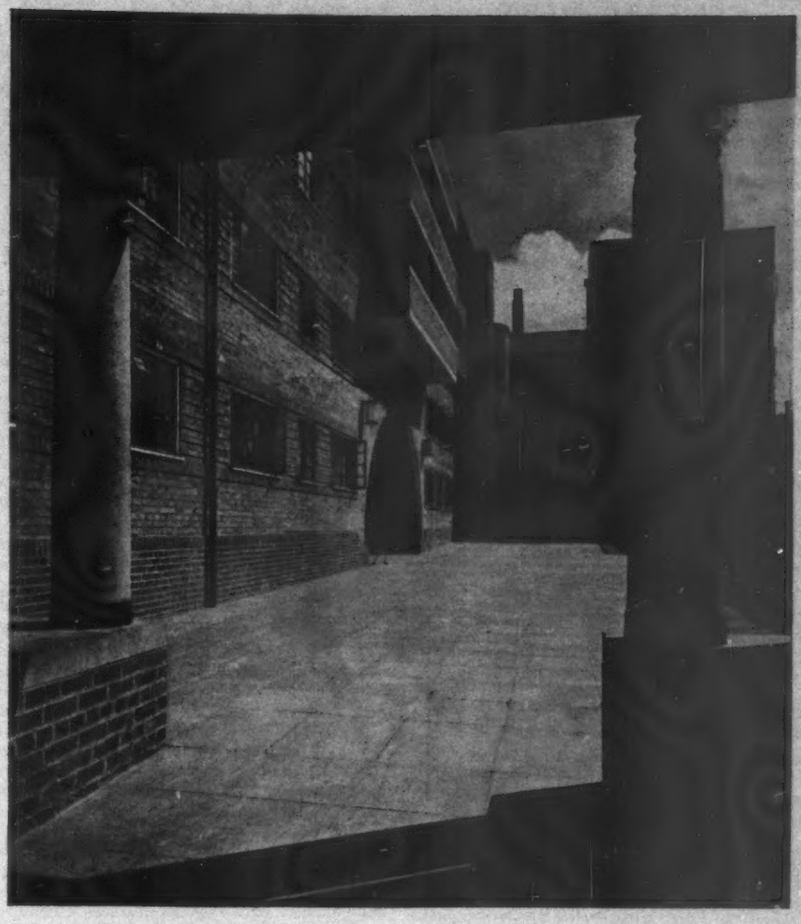


MODEL OF QUARRY HILL TENEMENTS, LEEDS.

MR. R. A. H. LIVETT, A.R.I.B.A., Housing Director, Leeds. (See page 923.)

Boldness in Replanning.

Mr. Keay refused to admit that there was any real basis for the controversy "Cottages *versus* Flats," which has lately engaged so much public attention. Obviously both types of accommodation are desirable in their proper environment. In the course of some comments which he made on the slides shown with the paper, the lecturer indicated the desirability of building flats reasonably high, and gave figures to show how, with higher buildings, an increasingly large proportion of a site becomes available as open space. The great schemes of flats carried out under Mr. Keay's direction in Liverpool, some of which we illustrate in this issue, provide convincing support for his contention that the problem of redevelopment must be tackled boldly. "We must not," he said, "be timid about the size of the schemes undertaken. Let us take up the call of 'Save the countryside,' and by great schemes of redevelopment effect economies in health and other services, and establish in our great towns those conditions which we as architects know to be possible, and which those engaged in social work know will make for the greater happiness of our people." The opportunities in London for redevelopment on a great scale are enormous, and Alderman Ewart G. Culpin, Vice-Chairman of the L.C.C., suggested something of the possibilities when, speaking unofficially, he envisaged redevelopment in the East End "not in acres, or tens of acres, but in square miles."



ST. ANDREW'S GARDENS REDEVELOPMENT SCHEME, LIVERPOOL : View through Colonnade.

MR. L. H. KEAY, F.R.I.B.A., Director of Housing, Liverpool.

(See page 923.)

The Central Housing Advisory Committees.

The Minister of Health (Sir Kingsley Wood) has announced the composition of the Central Housing Advisory Committee, provided for in the Housing Act, 1935, to advise the Minister and local house management commissioners on specific questions which may be referred to it. The Committee is also empowered to make representations to the Minister on any question of general concern in relation to housing. The members, 25 in all, are as follows:—Lord Balfour of Burleigh, Sir Harold Bellman, Mr. G. M. Burt, the Earl of Crawford, Mrs. M. M. Dollar, the Earl of Dudley, Sir Francis Fremantle, Miss Megan Lloyd George, Mr. George Hicks, Alderman A. L. Hobhouse, Mr. L. H. Keay, the Countess of Limerick, Mr. O. Ling, Alderman Miles Mitchell, Mr. C. J. Newman, Alderman E. G. Rowlinson, Sir Isidore Salmon, Rev. E. St. G. Schomberg, Mr. L. Silkin, Mr. J. A. Simpson, Sir Raymond Unwin, Mr. J. A. F. Watson, Sir Seymour Williams, Mr. J. Greenwood Wilson, and the Bishop of Winchester. Sir Kingsley Wood will be chairman of the Committee, and the vice-chairman will be his Parliamentary Secretary.

London Architecture in Brick.

A ceremony which gained greatly through its absence of formality was held at the Carpenters' Hall on Tuesday last, when gold and silver medals for the best brick building erected within eight miles of Charing Cross, during the past three years, were presented to Sir Giles Gilbert Scott, R.A., and Mr. J. E. Clark, Consulting Architect and Foreman Bricklayer respectively, for the Battersea Power Station. These awards, which are the first of their kind, were made by the Worshipful Company of Tylers and Bricklayers. The Master, Dr. Ward, presented the medals, and referred to the object of the awards, namely, the encouragement of good brick building and bricklaying. Sir Giles, in acknowledging the award, referred to the tendency to-day to use regular, machine-made brick which, he said, lacked the charm and variety of the hand-made, irregularly shaped kind. He also made reference to the use of coloured mortar in the pointing, which influenced to a considerable extent the final appearance of the brickwork. As an example, he quoted the case of the "Guinness" factory at Park Royal, where a dark brick had been given an altogether different and more pleasing tone by the use of pink mortar. Battersea Power Station was illustrated in our issue for July 14, 1933.

The General Election.

We note among the names of Parliamentary candidates returned at the General Election a number well known in the building industry, either professionally or by reason of the interest taken by them in architectural or kindred activities, among them being Mr. A. C. Bossom, F.R.I.B.A., Sir Robert Tasker, V.-P.I.A.A.S., Mr. H. R. Selley, L.C.C., Mr. George Hicks, Sir Jonah Walker-Smith (director, N.F.B.T.E.), Mr. D. G. Somerville, Sir Isidore Salmon and Mr. A. E. L. Chorlton. It is surprising that more of those connected with one or other of the branches of the building industry, with their peculiar faculties for organisation and planning, should not stand for Parliament. The foregoing list, though small, is at least representative, and we do not doubt that the claims of the industry and its value as a promoter of prosperity will receive its full share of attention in the House of Commons.

GENERAL NEWS

Professional Announcements.

Mr. F. Harding Lowman, M.Inst.R.A. (having dissolved his partnership with Mr. S. F. Braddy, of Sutton), is continuing his practice at No. 5a, The Pavement, Grove-road, Sutton, Surrey, where he will be pleased to receive trade catalogues.

Mr. Eustace L. Haynes, F.I.A.A., architect and surveyor, states that on and after November 23 his address will be 114, Newgate-street, London, E.C.1. The telephone number will remain: National 4247.

Messrs. Culpin and Son, architects, 3, Portsmouth-street, Lincoln's Inn, W.C.2, announce that their new telephone number is Holborn 8341 (2 lines).

Upwards of eleven appointments as architects, assistants, quantity surveyors, or clerks of works are advertised in this issue by public authorities as being vacant.

A Mayoral Election.

Mr. T. H. Johnson, F.R.I.B.A., has been elected Mayor of Doncaster.

Severn Bridge Scheme.

Gloucestershire County Council has now agreed by 58 votes to one to promote a Bill in Parliament in conjunction with Monmouthshire for the building of a new Severn bridge at or near English Stones.

Broadcast Discussion on Housing.

We are informed by the B.B.C. that the broadcast discussion on housing, which was to take place in the Northern Ireland programme on November 26, has had to be withdrawn owing to unexpected difficulties.

Consulting Architect to York Minster.

The Dean of York and the Chapter have appointed Sir Charles Peers as consulting architect to York Minster, in the room of the late Sir Walter Tapper. Sir Charles has already been appointed to a similar position at Westminster Abbey.

Gift to National Trust.

The National Trust have accepted from Lady Rhondda and the Dowager Lady Rhondda some 2,130 acres of the Sugar Loaf, just north of Abergavenny, together with covenants over Park Lodge, the farm in the hollow below. This hill is at the south end of the Black Mountains and rises to a height of nearly 2,000 ft.

Obituary: Aylwin O. Cave.

Mr. Aylwin Osborn Cave, F.R.I.B.A., whose death is announced at the age of 60, was responsible for much work in the Letchworth district, where, apart from many private houses, he designed a number of blocks of shops in the town, and also the Memorial Hospital. He planned a scheme of 274 houses at Letchworth and also a housing scheme at Salisbury.

Architects' Estates.

Sir Walter John Tapper, K.C.V.O., R.A., F.S.A., P-P.R.I.B.A., who died on September 21, aged 74, left estate of the gross value of £29,813, with net personalty £27,356.

Mr. John Hall, of Sunderland, architect, vice-president of Sunderland Antiquarian Society, who died on July 28, aged 65, left estate of the gross value of £17,221 3s. 3d., with net personalty £16,478 7s. 4d.

Christmas Holiday Lectures on Architecture.

The ninth series of Christmas Holiday Lectures on Architecture will be given at the Royal Institute of British Architects by Mr. G. A. Jellicoe, A.R.I.B.A., on Monday, December 30; Wednesday, January 1; and Friday, January 3. The talks, which will be illustrated by lantern slides, will be held at 3.30 p.m. on each day. Mr. Jellicoe has selected "The Architecture of Gardens" as his subject, and will speak on: (1) Italian gardens, (2) French gardens, (3) English gardens.

Replanning at Bath.

Bath City Council, at a special meeting on Tuesday, approved a resolution to promote a Parliamentary Bill giving them powers to remove the Royal Mineral Water Hospital and to acquire property for replanning. There was some opposition to proposed street works, but amendments to delete them from the schedule were rejected. An important part of the proposals is the suggestion for the extension of Milsom-street by cutting through existing buildings and the creation of a piazza in front of the Assembly Rooms.

Posters for Schools.

With the encouragement of the three Departments of Education in the United Kingdom, the Post Office has arranged experimentally for the free periodical issue to schools of posters and maps illustrating the growth and development of modern communications. The present set comprises six posters, four of which are the work of Mr. John Armstrong and represent the progress of communications through the ages. In addition, there are two posters by Mr. John Cooper.

Model School for L.C.C.

The Council for Art and Industry have asked the L.C.C. Education Committee to allow them to design a model school. Mr. Frank Pick, chairman of the Council for Art, making the proposal, stated that they were of opinion that the time is ripe for a review of present standards of school buildings and equipment. They asked to be entrusted with the task of designing an elementary school, together with its equipment, conforming to modern standards, which other local education authorities might be referred to as a model school. A sub-committee are of opinion that, as an experiment, and with a view to obtaining possible new ideas, the proposal should be approved, subject to certain safeguards. Mr. Pick has selected the school in Lyndhurst-grove, Camberwell, which is to be rebuilt within the next two or three years, as a site suitable for the experiment.

Rating of Land Values.

The Town Clerk of the City of Cardiff has forwarded a resolution to every County Council and County Borough in England and Wales on the subject of the rating of land values. A resolution was passed by the representatives of 45 authorities at Cardiff last September, urging that the existing system of rating should be altered so that local authorities be empowered to levy rates upon owners in respect of the value of land, apart from improvements, for the purpose of (*a*) effecting a reduction in or abolition of local rates payable at present by the occupiers of rateable property; (*b*) securing that the public shall benefit from the land values which arise from the presence and activities of the community; and (*c*) facilitating the acquisition of land, the provision of houses and the making of public improvements.

Commonwealth Fund Fellowships.

The Commonwealth Fund of New York, founded in 1918 and supported by gifts from the late Mrs. Stephen V. Harkness, has established for British subjects a number of Fellowships tenable at certain American Universities. The Fellowships, which are available for architects, are confined to University graduates, but a graduate who is taking a course at a school of architecture which is not a University school would be eligible to apply for a Fellowship. There is no fixed stipend, but the emoluments attaching to each Fellowship, which is estimated at the approximate annual value of $3,000. is calculated to cover the full expenses of residence, travel and study in the United States during the year. Copies of the memorandum and form of application for the Fellowships may be obtained free on application to the Secretary to the Committee of Award, Commonwealth Fund Fellowships, 35, Portman-square, London, W.1.

THE ARCHITECTURAL ASSOCIATION

BUILDING LONDON: PRESENT-DAY PROBLEMS.

Mr. R. A. Duncan recently delivered another of the series of lectures now being given at the Architectural Association, 36, Bedford-square, W.C.1.

London, said the lecturer, was now so vast that any attempt to plan or manage it by centralised bureaucratic control was, in his opinion, doomed to failure. A newly-designed town of manageable dimensions might be zoned, various areas being set apart for work, play, residence, shopping, civic centre, and so on; but London could not be zoned in that way. We must retain the idea of separate towns grouped in one unity, and the central body should not have too much power. The proper attitude was to appreciate the accretion of London for what it was, treating each separate part as a basic separate element, and linking all the things like transport that were essentially centrally organised. Then each borough could be zoned separately, and this would enable people to sleep, work and play each in his own part of London more than was the case at present. The proximity of industry need not render whole districts unsuitable for residential or play purposes. The gradual abatement of the smoke nuisance would render large areas of London pleasant places to live in, and the modern factory in many instances looked well. If the industrial building could become a seemly neighbour there would be no need to remove it from a locality. The work place should be within reasonable distance of the sleeping place: people should not spend hours every day travelling to and fro between the places where they worked and slept. The play place also should be accessible. A green belt around London did not solve this problem.

In London, as in other large towns, there was a tendency for the population to leave the centre and go to an ever receding outer ring. One cause of this was the gradual decay of the more central areas. Thus, the greater part of Paddington had been built about 1830, and the whole place was now going down, and down, and down. On selected sites near the park flats were being built, but all the rest was becoming one dead mass, and all would be obsolete and useless about the same time. Most of the houses had been built on a ninety-nine years lease, and as the leases ran out became worthless except as slum property. A similar remark might be made about many other London boroughs: some of them, like Battersea, were a little older than Paddington, and others, like Kensington, not quite so old. A Town Planning Act could not operate adequately in such areas without something of a very different character in the way of legislation; because the alleged control of town planning was negatived by a mass of deteriorating property which could not be either condemned or shifted. What he advocated was that all buildings, excepting those of a few strictly limited types, should be considered temporary structures. Imagine how simple town planning would be if large areas of, for example, Battersea, could be declared obsolete, the licence of the present buildings having expired.

In reply to some questions, Mr. Duncan said that at any given moment about fifteen per cent. of London was unoccupied, but was held up for increased value. If his scheme was applied there were acres of derelict property to be started on.

Mr. F. R. Yerbury, who presided, said that Amsterdam had a definite land purchasing policy. The municipality bought land in very large quantities from time to time, held it, and was prepared to let or sell it to people to operate on, fixing the price according to the use to which the land was to be put. Land that was bought from the municipality could not be held for a rise in its value.

THE TOWN OF THE FUTURE

FLATS OR COTTAGES?

By A LISTENER.

As a popular lecture, Mr. Geoffrey Boumphrey's recent broadcast under the title "Looking for the Town of To-morrow" was as successful as most of such features can be. Such talks must attract the listener, must be framed together with an artistic sense, and must leave room for self-questioning among those who hear it. This talk did all this very effectually, and what is written now must be regarded as the words of a listener who has been stimulated into much self-questioning, and who now converts those thoughts into printed words.

The main point of the talk, which inspired this mental activity, was the attempt to prove that the building of ten-story flats was the sensible solution of the housing problem, irrespective of site, place, or peculiar conditions. Now the writer is opposed to the building of flats in any circumstances where an alternative, at least equally feasible, is available; and he thus entered the unspoken discussion with a certain prejudice against the lecturer. A statement that upon a given area of ground of suitable size it was possible to build 60 per cent. more dwellings in blocks of ten-story flats than by two-story house-building is attractive upon the surface. Knowing that the ordinary housing estate will carry very comfortably sixteen houses to the acre, and, under duress, twenty, this was equivalent to a claim that blocks of flats would increase this density to one of thirty-two to the acre. Now at first sight this seems easily understandable, as would a claim that in 100-story blocks the density could be still increased tenfold, since a freehold (where there are no restrictions) extends to the stars.

The statement was, however, made within certain restrictive reservations. It was claimed that under such conditions (1) an ideal would be observed whereby north and south streets were to give a maximum of sunlight on both faces of the buildings lining them; (2) the buildings should be one flat deep, with east and west windows to each flat; and (3) an angle of light of 30 degrees should be provided from one block to another.

Density and Light.

Such a specification invites experiment, and I have attempted to see what such requirements demand in the way of space. I found that the claim of 60 per cent. increased density was not an exaggeration; in fact, I found a slight increase above this percentage. But I found also that the angle of light in two-storied estates was very much flatter than 30 degrees; and that if a similar low angle of light were observed in the five-storied blocks the available densities became roughly equivalent.

Thus we find that we cannot materially improve our land values per dwelling on a housing estate unless we accept a lower standard of light and air. Now we can return to the question of flats or houses with a lighter heart.

The subject was still further elucidated in an amusing debate between the same lecturer and Sir Edward Darwin Simon, whose experience in Manchester gave authority to the facts he quoted.

Is flat-building cheaper? The ordinary two-story workman's dwelling is being built in the country to-day for about 7d. per foot cube. Personally I have not heard of any multi-story building being built under 1s. 2d. per foot cube, and the nearest approach to 7d. is a cube price of 10½d., which I understand was achieved in some three-story flats on a municipal estate. These figures may not be authoritative, but I invite any flat protagonist to beat the better figure, which leaves an ample margin to cover the increased cube of a domestic building of two stories covered with a sloping roof.

There are, however, many other cost factors than one of cube to be considered. There are lifts to be installed and run, and a common staircase and escape stairs to be provided. Heating must be by ordinary fires and flues or by a central heating system. The chimneys of the one become costly works in a ten-story building, and the central system of the other at least as dear. The cost of these things alone is likely to exceed £1,000 for each twenty dwellings, observing the utmost economy.

The Cost of Flats.

The figures which Sir Edward gave fully confirmed the fact that the cost factor is entirely against the block of flats.

What are we going to do about the running of lifts? Are they to be attended or automatic? If the former, at what cost? If the latter—what games for the sixty children that may have access to each! Let us assume the former as the only practical alternative. The annual cost of running such a lift and paying an attendant would be not less than £300 per annum, or £15 per annum per flat under the conditions we have accepted. Who will pay this rent? Or is it to be capitalised and charged to the cost of the dwelling? Need we say any more about lifts?

Is it more convenient? The question should be put to a housewife with a young family, shopping daily with a perambulator and probably one or two little ones on the lead. The answer can be left to her. And in spite of Mr. Boumphrey's claims as to the privacy of flats, there is no doubt that the average citizen feels more in his own house when this stands in his own garden.

Is it healthier? The answer might be measured by a chemical analysis of air taken at ground level and at 90 ft. or so in the air. If the unlikely answer is much in favour of the latter, we must remember that there are still lower stories to a block of flats, which gain nothing by the elevation of their neighbours. Actually we should find the purity of the air little affected by such a trifling elevation. Presumably we must accept the rubbish chute for the tenement building. Possibly the sanitary authorities of the future will contrive a sanitary rubbish chute. They have certainly not done so yet.

So far as drains are concerned, we should no doubt make use of one-pipe drainage, but it must be obvious that such a system standing the high pressure of a 90 ft. building will not be less in cost than that of an ordinary earthenware-pipe system to a housing estate.

The debate also brought out the interesting point that Mr. Boumphrey's ten-story blocks were to be raised upon a ground floor of shops, so that what we had been reckoning as a 90-foot building was really a 100-foot building.

Satellite Towns.

Quite frankly, the writer has wished to find the scales loaded against the building of flats where open land is available, but the conclusion has been reached reasonably, and there would seem to be little room for argument upon the facts. It is agreed that attempts to found satellite towns for a working-class population far afield from the centre of work have not proved successful. The alternative in such cases is the multi-storied tenement building on the spot, with all its lesser evils. Do not let us imagine, however, that we are by these means discovering a way of solving the national housing problem. The block of flats is far better than densely built back-to-back houses. But it is a poor substitute for the modern country housing estate.

How is it, then, that we find such unearned enthusiasm for the multi-story domestic building against the endless repetition of small units which represents the average housing estate? A pair of semi-detached workmen's cottages can be quite a pleasing unit of design; but a hundred of such units, although varied in detail and shape—but not size—can become, in fact must become, as wearisome as an endless colonnade, however pleasingly designed. The architectural mind demands something broader and more substantial to treat architecturally.

So there becomes a natural bias towards a bigger building unit, a bias which most of us architects can hardly fail to share, and which points the finger at some false measure in our treatment of small domestic architecture over the last few generations.

The small "detached" and "semi-detached" idea has arisen out of a social snobbery which seeks to reach the detachment of the country house under conditions and within means which reduce it to a microscopic absurdity. As the price of this pretence we have destroyed domestic street architecture over a period of sixty or seventy years and have created problems in development which should never have arisen.

The Case for the Terrace.

But let us not cure one absurdity with another. The remedy is to maintain the convenience and reasonable privacy of an urban population by reverting to the terrace. A group of eight or a dozen dwellings under one roof conjures up a vision of breadth and possible quality without introducing any loss of personal convenience and amenity: for the problem of the soundproof party wall is as well within our powers to solve as that of the soundproof floor which Mr. Boumphrey acclaimed.

Let us think of our town of the future more on these lines, which lead us back to a saner period instead of forward into a mad and misty future. Architecturally we may be the means of leading the social conscience into more stable lines of steady progress, which will convince us that family life is not some kaleidoscope through which the gaudy colours of the latest fashion can impose a new form.

This generation needs, more than anything else, to realise the great power it has to move forward upon the basis of a firm tradition, and the utter futility which remains, if the knowledge of our fathers is thrown on the scrap-heap. For this reason I have felt that Mr. Boumphrey's popular thriller needs the companionship of a few of the old classics to make the library a safe place for young people.

COMPETITION NEWS

Proposed Council Offices, Farnham.

Farnham U.D.C. is to offer premiums of £150, £100 and £50 for designs for proposed Council offices, to cost approximately £20,000.

CURRENT COMPETITIONS.

	Particulars published in "Builder."	Sending in date.
Public Library, Colchester. Limited to Essex, Cambs. and Herts Society. Professor A. E. Richardson, F.R.I.B.A., assessor. Premiums, £150, £125 and £75. Conditions (dep. £1) from Clerk, Town Hall	Sept. 6	Nov. 30
Town Hall, Bury, for T.C. Mr. J. H. Worthington, F.R.I.B.A., assessor. Premiums: £500, £300 and £150. Conditions (dep. £2 2s.) from Town Clerk, Bank-street	Aug. 2 Aug. 23	Dec. 31
New Parliament House, Salisbury, for S. Rhodesian Government. Mr. James R. Adamson, F.R.I.B.A., assessor. Premiums: £500, £300, £200 and £100 are offered. Conditions (dep. £2 2s.) from High Commissioner, Crown House, Aldwych, W.C.2. Designs to assessor (Bolton, England)	Aug. 2	1936. Jan. 31

Faculty of Surveyors of Scotland.

The following candidates have successfully passed the recent Preliminary Examination of this Faculty:—G. H. Menzies, Edinburgh; A. E. Rolland, Dunbar; J. R. Ponton, Edinburgh; A. C. Laing, Edinburgh (1st prize); J. S. R. Storrier, Glasgow; A. Bland, Glasgow; J. S. Laurie, Wishaw; W. B. Gebbie, Ayr; I. Simpson, Glasgow; W. J. Haggart, Glasgow. Five other candidates had partial passes.

CORRESPONDENCE

"Tradition, Construction and Architectural Education."

SIR,—I am obliged to Sir Reginald Blomfield for his courteous reply last week to my letter which appeared in your issue for November 1. May I point out, however, that Sir Reginald has not replied to my most important question? In my letter I wrote: "Many of Sir Reginald's readers, serious students of architecture, would, I am sure, be glad to have his views on the relation of architectural tradition to new methods of construction. . . . Is it a proper thing to use structural steel and reinforced concrete in the forms of historic masonry building (which was itself the structure), or do these new forms of construction demand a totally different expression?" This is a real intellectual difficulty for many who practise or take a serious interest in the art of architecture. It is not confined to the professed modernists, but is felt by many who, admirers of historic architecture, would be glad to find sound philosophical reasons for the perpetuation of traditional architectural forms in association with modern construction. With many who have given any thought to this subject, however, there remains a lingering doubt of the propriety of clothing a steel framework with all the masonic features of Renaissance architectural design and structural practice. The great display of columns, pilasters, arches, architraves, mouldings, rusticications, etc., that one so frequently finds on new buildings is generally little more than theatrical decoration. Obviously, steel framework must have a casing of some kiud, but I am far from being convinced, if I may use a metaphor, that the Roman toga is the correct garb for the modern city business man. I am hopeful that in course of time we may reach a satisfactory architectural expression of modern structure, and so far as I can see there is no reason why such an expression, though distinctive of its time and purpose, should be out of harmony with the traditional work that we all admire. S.W.19.

SIR,—In a letter published in your last issue Sir Reginald Blomfield says: "I attribute these blunders of judgment to the lack of any considered standards of values." The only "blunder of judgment" mentioned is, to quote Sir Reginald, "Reinforced concrete, for example, when used for domestic and small-scale buildings, is unhandy to build, difficult to alter, and unkindly to look at, and these little white boxes, scattered about at random, without regard to site and surroundings, are going far to disfigure the countryside of England."

My business has led me to be interested in reinforced concrete houses, and I have spent a great deal of time inspecting and investigating these "little white boxes." They have been reported to me as "another reinforced concrete house," or "another flat-roof house that looks like a concrete job," but on inspection, or after making inquiries of the architect or builder, I have found that the houses are rarely reinforced concrete structures. In 19 cases out of 20 I have found that they are built of brick and covered with white or tinted rendering. With the exception of the housing schemes built immediately after the war there are very few concrete houses in this country, and still fewer reinforced concrete houses.

Is it possible that Sir Reginald's critcisim of so-called modern houses is, on this point at least, based on false assumptions?

H. C.

All Hallows Church, Lombard-street.

SIR,—May I be allowed, by your courtesy, to correct a statement in *The Builder* of November 8, that All Hallows, Lombard-street, E.C., is to be demolished, and "has, by the request of the church council, had its benefice joined with that of St. Edmund King and Martyr, Lombard-street."

This statement is being put about, but is not correct. A good deal has yet to be done under the Act of 1860 before the benefice could be united, even without opposition, and the church demolished. There will be considerable opposition.

WALTER J. BELL.

SIR,—In a recent issue of *The Builder* I read of the proposed demolition of All Hallows Church, Lombard-street, the reasons being, I gather, that it is scheduled as a dangerous structure and that the site is valuable. By now, I believe, nearly half Wren's churches must have been destroyed. Apart from sentiment, sectarian or religious beliefs, it seems rather a pity. There exists a Society, does there not, which is supposed to interest itself in such matters? It would seem that questions ought to be asked. If London is to be rebuilt, perhaps it would be well to take steps to preserve what remains of our architectural heritage. As, however, Waterloo Bridge has nearly vanished, I assume that no more care will be taken over other structures. W. H. H.

[*.* Our correspondent will see from the minutes of the R.I.B.A. Council meeting of November 4, published elsewhere in this issue, and be glad, as we are, to note, that a memorandum has been prepared by a Conference of representatives of Learned Societies, presided over by Viscount Esher, protesting against the proposed destruction of the church.—ED.]

"Education for the Consumer."

SIR,—In reference to the articles by John Angus which have appeared in your columns on "Education for the Consumer," one of the most important of the many points that remain obscure, and which the Council for Art and Industry fail to elucidate, is the view expressed that the child, the future producer and consumer, is the person most in need of education. Most educationists in the county schools realise how, with the encouragement to do so, the boy or girl will design with astonishing sensibility, and naturally, if not intercepted, produce delightful drawings and designs. I have myself been shown the work of boys and girls taught drawing and craftwork in the school, producing, when left to their own initiative, results full of originality and spontaneous charm, the product of delight in the occupation and the natural instinct for beauty which is in all of us until corrupted and diverted by commercial control. From this we may conclude that after leaving school to become workers, influences intervene which suppress this natural impulse, and I feel sure that the first responsibility for this lies with the producer. The development of machine power, enormously increasing the rapidity of production, encouraged the pursuit of profits over every better consideration to the destruction of quality in the things produced and the enslavement of the worker.

When we are told that the choice lies with the consumer, we know that the consumer has but little choice—that he must purchase out of what is put before him. The trouble is that in the things of daily use, in the pursuit of novelty, such rubbish still prevails. To say that the producer will be encouraged to pay more attention to design when the consumer asks for it is to disregard the fact of the little opportunity he has for doing so. As is well pointed out by the writer of the articles on the subject, the problem is one more of life and its direction. And the fact of primary importance, as stated, is the education of industry itself. A consideration of the first importance is the sociological bearing on all this, and the writer, in calling attention to it, touches what are really the most vital issues, issues more important in their bearing upon human welfare than economics. As stated by the writer, "There are conditions which art and industry must observe before they can sell their wares to a public that requires little teaching to show its preference for good and attractive things."

A fallacy that needs combating is that which asserts that well-designed things must necessarily cost more. There is no sufficient reason why a well-designed cup and saucer or teapot should cost more than one ill-designed. The trouble is far more one resting on lack of taste and motive than of cost. We unload our failure on to economic conditions as though we did not create these ourselves.

When the manufacturer tells us that he cannot afford art and must wait for the consumers' appreciation, on account of the shareholders who would have something to say if he did not, the fact is really quite different. It is his taste that is wanting—to distinguish good from bad. Nor is it the fact that the consumer would not appreciate better design and fitness if it were put before him. As the writer states, "The remedy lies with designers and manufacturers," but mostly with the latter. The emphasis is wrongly placed which would put the blame on the consumer.

The Council for Art and Industry, in their inquiries into industrial art, also disregard its nature. The beauty which should adorn things of use is a measure of the freedom and delight of the worker in what he is doing. Education without this liberty will fail to effect the amelioration we desire. The Council will also fail in its efforts without understanding of these prior sociological considerations. So we come back to the real issue, which lies in what we seek out of life; whether, in fact, we care enough for beauty to seek the means of its emergence. So long as industry is content only to increase its profits, we shall continue in the old bad ways. The machine is not to blame, but the use we make of it. A good servant, but a bad master, its capacity for producing great quantities has overwhelmed the consideration of the fitness of the things produced. To quote from the writer again: "It is reasonable, I think, to ask industry to be artistic for the sake of the people."

I do not wish to underrate the great psychological differences affecting outlook which are inevitable in order to unite art and industry, whose true relationship is not that of art imposed on industry from outside, but rather the outcome of industry growing naturally through itself.

On the whole, the consumer takes what is given him—what else can he do? And if through the Council for Art and Industry he can obtain better things, he will be educated through having them. It is the habit of such reformers to disregard the intelligence of the public; if we could convince our manufacturers that it is the low level of their taste and direction that is the chief cause of the evil, we should be on more certain ground. For the trouble is that the designer has not the freedom to do his best work; is too much at the disposal of the employer in his preoccupation on profits.

The trouble is the old one, only we put it from us, and applies in almost every direction of present outlook. We want peace but are not ready to pay the price of it. It is so much easier to wish for those things than to have them. There is no security for art, or life itself, so long as we ignore the inevitable changes through which alone they can be realised. And neither education or economics, nor both together, can effect the amelioration we seek until well-being is put before profits, and we are prepared to give up what hinders a better outlook on life by sharing it more together.

When we talk of reform or change it is always for the other fellow! So the Council for Art and Industry tend to put the blame upon the consumer. We have too much reason to fear that all this present preoccupation for the amelioration of art and industry has more to do with markets than with the arts, seeing that the nature and source of beauty is so little understood. So long as this is so, and we ignore the real causes of the separation between art and industry and seek for figs from thistles, we shall continue to suffer the loss. It is not our economic but our spiritual values that are most mistaken. There is not the composure, the freedom from worldly aims, to create that overplus to

material existence which flowers in beauty. When the level at which we live is raised above material things to include higher values, beauty is its natural endowment, for "since when did the lotus come to the bee?" "When the half-gods go, the gods arrive."

ISIS.

Modernism in Design.

SIR,—I have been astonished, and I may say saddened, by the contemplation of exemplary so-called modernism in design. But "Hope springs eternal in the human breast," and I am inclined to believe that "modernism" is not a normal and healthy evolution which will have a given place in the history of architectural design and the contemporary developments of painting and sculpture, but is rather the symptom of a disease which time will cure. It is in my view both hysterical and unmeaning, and may be summarised as the attempt to impose what may be described as an insignificant ego on the scroll of Time—an ego which will be forgotten in a brief span of years when the patient regains his sanity. The forms of architectural design are but words; the use of them may be literature or trash. I claim that in the so-called styles and art of the past there is nothing which fetters us in expressing the wants of our age if we use them freely and without a self-conscious effort to produce something "new" when we should be concerned with creating something "good." Perhaps the best manner of expressing my views is to imagine a conversation which might take place in a "Palace of Truth," where we should be impelled to speak the truth, the whole truth, and nothing but the truth, as under.

HERBERT W. WILLS.

Q.—"Why is it that the forms of architectural design require complete recasting in a new manner, and what is the reason why such changes should necessitate a sharp break with everything previously carried out?"

A.—"We live in a mechanical age, and have no use for anything which is simply beautiful; we are tired of all tradition and greatly dislike anything which reminds us of anything which was considered good in past ages. We are not evolutionists but revolutionists, and wish that all buildings should emphasise this point."

Q.—"What means do you believe in adopting to make this clear?"

A.—"We deliberately try to avoid anything we have seen before in the past. It is true that we still have to make a doorway rectangular, though we are sorry to do so. We also have to have window openings, but these we can arrange in unexpected proportions and groups in a new manner. One of these, made possible by the use of steel and concrete, is to place windows at the extreme angles of walls where previously designers tried to give an appearance of solidity to a building, and such windows meet at the angle thus destroying the foolish prejudices in favour of the solidity of an angle. Another method is the prolongation of windows themselves until they become a series of horizontal slits, which would have been avoided by the prejudice of past ages. To startle is our aim, and windows have no longer any relation to the fact that they were formerly employed to give sufficient light; our object is but to give interest by providing the unexpected."

Q.—"Do similar methods apply to the design of smaller features?"

A.—"Certainly. Our doors must be designed either without any panels or with panels arranged in a new and unexpected manner—say, a triangle, the apex of which reaches to the door-head or a reversal, with the apex at the bottom. Mouldings must on no account be used; either a square sinking or rectangular strip of wood may be substituted. If glazed panels are required they can be divided by bars arranged in a new manner, say, sloped at regular or irregular angles; but any attempt to follow the geometrical devices of a past age must be avoided. Chimney-pieces afford an opportunity; if carried out in wood, they should as far as possible be made to look like square blocks of unmoulded stone. The shelf of past ages must be dispensed with. A square block of stone or marble placed in the centre, and going up two-thirds of the height of the room, will form a novel feature. Cornices must usually be dispensed with, but if used must be built up as a series of planes, only divided from one another by sharp square angles. Anything which will give a line of shade is not required. Our buildings may be of any height, but absolute bareness is to be aimed at. A succession of triangles of some different colour or texture may perhaps be occasionally employed."

Q.—"All this is very interesting. Can you tell me more?"

A.—"Yes. You must remember that no columns must be employed anywhere. Either a square pier without capital or base, or a circular drum without capital or base, may be used."

Q.—"What you tell me is both interesting and informative, but if you would express the general ideas which govern Modernism I might learn even more."

A.—"Willingly. First, as to materials used. In this age almost anything can be done. Formerly we thought that a certain treatment was suitable for stone, another for wood, and yet another for metal. Our aim now is to treat all design in materials in the same manner. Our wooden form may suggest stone, or vice versa, only all must express modernism and contempt for tradition. Our sculpture shows its authors' disregard for anatomy and complete indifference to form as we formerly knew it, but all is stamped by modernism. Take a clock as an example of our methods. Formerly a clock-face was circular. Our clock-faces may be square, or of any unusual shape. The hands of the clock frequently used to be ingenious and very often intricate designs in metal; now we prefer hands which may resemble a spade, or any other lump of metal. We do away with the figures round the clock-face, substituting block smudges of varying widths for them. Is there really such a thing as time? May not all figures be equally untrue in a world in which time does not exist, but only space-time? We claim that all art should be understandable by the people. But the people know nothing; therefore we give them what is not Art in the old sense, but the negation of all art, and thus we are truly expressing the spirit of the age in which we live."

Are we not nearer to Nature if we cast aside knowledge? To do so we should draw as an untaught child draws. I have seen a painting entitled "The Orange Woman," in which the oranges were represented as yellow billiard balls piled up at an angle of about 70 deg. The men round had sky-blue billy-cock hats, a single curved line representing the brim. All might have been the work of an ingenious untaught child. Our sculpture, too, has more affinity with that discovered in Easter Island, the work of the happy, unsophisticated natives before the world began to think and attempt to discover. The great beauty of Modernism is that knowledge and effort are not required; it makes all of us democratically equal. In architecture we become as little children, playing with lines and colours in an engineer's world.

This seems to render Modernism more intelligible and to explain what has often puzzled many of us.

H. W. W.

L.P.T.B. Shelters.

SIR,—On page 853 of your issue dated November 15 you show two shelters of the London Passenger Transport Board, both of which are attributed to me. I would like to point out that the canopy-type shelter is not my design.

CHARLES HOLDEN.

9, Knightsbridge, Hyde Park Corner,
London, S.W.1.

[We regret the wrong attribution, which was assumed from descriptive matter supplied to us by the L.P.T.B.—ED.]

"THE FIRST MODEL OF ST. PAUL'S"

IN the course of an article in *The Times*, Mr. Arthur T. Bolton says that "of all the problems connected with the rebuilding of St. Paul's Cathedral, the nature of the first model of Sir Christopher Wren has been the most obscure. It is a curious fact that no drawing or print so far discovered has thrown any light on this important subject. This year, however, Mr. Godfrey Allen, Surveyor of the Fabrick, invited the writer to inspect a much dilapidated and obviously incomplete wooden box which it was hoped might be the missing First Model. It has so little connection with the well-known Great Model, or with any drawings so far published by the Wren Society, that it seemed impossible at first that it could bear any relation to St. Paul's. But by degrees, through a careful collation of such few references as exist, a very good case has been established, and further supported by instances drawn from other famous buildings by Wren."

After quoting contemporary references and describing the model, Mr. Bolton proceeds:—"It is most unfortunate that up to the present no fragment of the missing part of the first model has been traced, but . . . a fair idea may be formed of what it was like when complete. There would naturally have been the three entrances—north, south, and west— . . . and, of course, the double order of the flanks would be carried round. This excludes any flight of external steps, so that the great ascent over the burial vault must have been inside the domed vestibule. In the church itself nave and choir are one, with a raised platform on each side used as galleries, and serving as a podium to free-standing columns. These carry an arcade that probably intersected a continuous barrel vault, with an effect something like St. James's, Piccadilly. This scheme anticipates the later Versailles Chapel, which, as all will remember, is on two levels. The discovery of the First Model explains, what has always puzzled historians—the great discrepancy between the Warrant Design and the present cathedral."

HOUSES AT RUISLIP

ARBITRATION ON ALLEGED BREACH OF TOWN PLANNING SCHEME.

An Inspector of the Ministry of Health held an arbitration inquiry at Northwood, Middlesex, on Monday, into the refusal of the Ruislip-Northwood Urban Council to agree to amendments in plans for two houses at Ruislip. The houses, which are flat-roofed, concrete-built, and incorporate a glass staircase and an unusual area of windows, had previously been disapproved by a panel of architects appointed by the Royal Institute of British Architects. The council subsequently agreed to the plans with certain modifications, and the builders, Messrs. Walter Taylor, Limited, of Harrow, began building.

Mr. Capewell, for the council, said the houses had been built with glass panels alongside the staircase, where concrete had been specified. This was regarded as a breach of the Town Planning Scheme.

Mr. Frampton, for the builders, agreed that they had departed from the plans by using glass, but as "Thermolux" glass* was used, thus ensuring privacy, the builders regarded themselves as justified in making the amendments.

Mr. B. R. Ward (of Messrs. Connell, Ward and Lucas), the architect, said he had had no hesitation in believing that the council would approve a minor modification.

The Inspector afterwards visited the houses, and will announce his decision later.

[*"Thermolux" glass is a glazing material composed of glass "wool" sandwiched between thin sheets of glass. Though opaque, it permits the diffusion of light to a high degree.—EDITOR.]

HOUSING AND THE REDEVELOPMENT OF CENTRAL AREAS.

A PAPER on "Housing and the Redevelopment of Central Areas" was read by Mr. L. H. Keay, O.B.E., F.R.I.B.A., Director of Housing of the City of Liverpool, at a meeting of the Royal Institute of British Architects, held at 66, Portland-place, W., on Monday, November 18, the President, Mr. Percy Thomas O.B.E., F.R.I.B.A., being in the chair.

The lecturer said that the statutory obligation to make provision for housing the lower-paid workers of this country had generally been met by the local authorities by the building of single-family houses in suburban areas. It was evident that this method of rehousing those displaced in connection with slum clearance schemes was contemplated under the Housing Act of 1930, for Circular 1138, issued by the Ministry of Health, refers to a higher subsidy being available where "in *exceptional* cases it is shown necessary to rehouse on the acquired sites." The Housing Act, which received the Royal Assent in August of this year, provided the machinery necessary for dealing with another phase of housing, namely, the prevention and abatement of overcrowding.

It was because he knew that he had been referred to as "essentially a local authority man," and felt that a satisfactory solution of this phase of the housing problem was not to be found in the further development of suburban estates, that he proposed to deal mainly with the urgent necessity for the redevelopment of the overcrowded and slum areas—work which was contemplated under the new Act, and which he believed could be better dealt with by the local authorities, assisted by housing associations where co-operative action was possible.

He need only briefly recall some of the conditions which exist in the centre of most large towns to-day. Behind the main thoroughfares were to be found narrow streets, unsuited to modern transport, and often only used as playgrounds by the children of the district; badly planned houses, many erected before the introduction of building by-laws; a lack of air space, a general low standard of amenity; and overcrowding. The dwellings were overcrowded, not always because alternative accommodation on the newly developed estates of the authority had been unobtainable, but because the tenants of the older houses, for good reasons of their own, had been unwilling or unable to leave the business areas of the town.

The most casual survey would also disclose the wasteful use of land and buildings; the unsatisfactory street planning; and the almost entire lack of open space and those amenities we now deemed essential. Here and there houses which were unsuitable to live in had been adapted for use as small business premises, but were equally unsuitable to work in. The properties usually belonged to a number of small speculators, and for that reason a comprehensive redevelopment scheme by the several owners was unlikely. The only buildings worthy of preservation were those owned by the local authority and the churches, which had often been erected by the contributions of the inhabitants of the locality.

Evidence was not wanting of the unsatisfactory conditions which resulted by rebuilding on small isolated sites, and a repetition of individual action by small owners could not be contemplated. It was largely because this was permitted towards the end of the last century that the undesirable planning of the smaller roads had remained and presented a problem to be dealt with to-day.

When the information which would be obtained from the housing surveys to be carried out under the new Act by local authorities was available, it would be found that adjacent to those areas which were now the subject of action under the slum clearance proposals there were districts in which overcrowding was considerable, and in which properties were beyond reconditioning. There was, therefore, every reason to anticipate that the local authorities would be compelled to increase their building programmes in order that suitable accommodation might be found for those displaced from the unhealthy and overcrowded dwellings in those districts.

Redevelopment or Satellite Towns?

There was still a school of thought led by some housing enthusiasts which urged that the slums should be demolished and the displaced tenants housed in garden suburbs or satellite towns. It was to be assumed that similar action would be advocated for the rehousing of those occupying the overcrowded houses discovered in such districts by the housing surveys, thus leaving large areas in the very hearts of our towns with the appearance of devastated areas on a war front. It was difficult to believe that such a suggestion was made seriously. And those who did surely refuse to recognise that in dealing with this phase of housing it was essential to adopt methods peculiar to the particular problem. The intention of Parliament, however, was quite clear, for the memorandum recently issued to local authorities in connection with the Act or 1935 stated that "It is recognised that a solution cannot be found in new building, however intensive, on sites more or less removed from the areas affected," and that "the only way in which overcrowding in such areas can be materially alleviated is by the provision within the areas of suitable accommodation for as many persons as the sites which are or can be made available will allow if adequately developed in accordance with modern standards."

For years the necessity of replanning the built-up areas of our towns had been urged, and the opportunity now arose for putting theory into practice; "where"—to quote the new Act—"certain conditions obtain, and where it is expedient to make provision for housing accommodation for the working classes, it is essential that any area should be redeveloped as a whole." In these schemes, to be carried out after the closest co-operation of the bodies responsible for housing and town planning, it should be possible to pay attention to both architectural planning and transport necessity.

It was because he was confident that it was possible to replace the slums and to rehouse the overcrowded families within the districts they at present occupied by the process of re-development that he suggested there need be no anxiety on the part of those who associated another housing drive by the local authorities with a further absorption of agricultural land. The country could still be saved by the redevelopment of our towns so long as the private speculator was curbed in his zeal for destroying country estates to provide "eligible building plots" for "Jerrybethan" villas. The advantages of redevelopment both to the tenant and the community, as opposed to removal to a suburban estate were readily apparent. The tenant was saved the cost of transport, which was really an added rent charge, and avoided the serious waste of time which travelling to and from some outlying district involved, and the community avoided additional transport difficulties in the already congested traffic roads. Light and air, and ample space for recreation, could be provided in the re-developed area, and existing amenity buildings, services, etc., would continue in use and the duplication of these services would be avoided.

The old controversy of the cottage versus the flat might be raised again, but in the circumstances he had just described it was his unwavering conviction that the building of flats in the central areas of our large towns and cities was essential to the solution of the problem, despite all that had been said and written against them. The benefits of the single-family cottage were generally admitted, but was it less possible to raise an A1 community in a properly planned township of flats than in a garden suburb? Was there any doubt that the rising generation in the great continental cities of Europe would be as fit physically and morally as the children of Wythenshawe and Dagenham and Norris Green?

For the past ten years it had been his privilege to occupy the position of Director of Housing of the City of Liverpool, where for over half a century it had been the policy to rehouse a large proportion of the tenants displaced by slum clearance operations on the site of their previous dwellings. At the present time the housing estate comprised 25,688 single-family cottages on the outskirts of the city, and 6,735 flats in the central areas. The present building programme contemplated the erection of a further 5,000 cottages and 10,692 flats, and this would be greatly increased by reason of the added housing responsibility placed upon the authority under the new Housing Act. The lecturer then made brief reference to some of the general principles which were applied in the lay-out and design of these buildings.

Site Planning.

Shape and contours, he said, must naturally influence the lay-out of any site, but the best result was admittedly obtained by planning blocks in parallel, running north and south, so that the flats had aspects to the east and west. Enclosed playgrounds were avoided, and the spaces set apart as gardens and for recreational purposes were concentrated, thus providing the maximum of open space. When it was necessary to erect an isolated block of flats on a small site the block was planned as a unit of an ultimate development embracing the area bounded by the adjacent traffic roads. A minimum angle of light of 30 degrees was allowed between blocks.

It was of interest to note how, with the same density of development of 60 families to the acre, the percentage of the site built upon decreased with the higher building. In a scheme of flats of normal accommodation five stories in height 76 per cent. of the site was unbuilt upon. This increased to 88 per cent. in the case of ten stories, and to 92 per cent. in the case of fifteen stories, whilst the distances between the blocks arranged in parallel would be 90, 210 and 330 ft. respectively. These figures were given not with the suggestion that fifteen-story flats would be erected, but to show the advantages of building upwards.

The number of floors in any block was dependent upon the provision or otherwise of lifts. Without this means of vertical transport three floors were the ideal and five floors the limit. Above that height the provision of a lift was essential, and it might yet be necessary, in exceptional cases, to build to ten stories.

Construction.

The normal construction was brick walls with reinforced concrete floors and supporting beams and columns. Alternative methods of construction would be considered in the event of any shortage in materials or of an increase in the number of floors over the five usually erected. Windows were of steel or wood or a combination of steel and wood. Floors of asphalt or wood except in sculleries, bathrooms and entrance lobbies, where quarry tiles were laid. Doors in the more recent schemes were flush-panelled and hung to steel frames. Skirtings were of tiles or cement and picture rails were omitted. Roofs were pitched or partly flat and pitched and constructed of wood, or wood and steel, and covered with felt and tiles. The flat roofs were covered with Ruberoid laid on insulat-

ing board and steel decking. Where parapets were constructed the rainwater was taken to the back of the buildings. Self-contained flats were erected on each floor, but the possibility of constructing a series of maisonnettes might have to be considered if buildings of more than five stories were erected in order to reduce the number of stopping places for lifts.

Method of Access.

Both enclosed staircases serving two flats on each floor and access balconies served by open staircases were adopted. The latter method had many advantages and was used in most instances.

Planning and Equipment.

The flats varied in size from the single bed-living room type to those with four bedrooms, and the following percentages of the various types were usual: Bed-living room type, 5 per cent.; one-bedroom, 20 per cent.; two-bedroom, 30 per cent.; three-bedroom, 35 per cent.; and four-bedroom, 10 per cent. Each flat was provided with a bathroom, and hot water was supplied from the back boiler in the living-room. This to some extent dictated the planning, it being desirable to group the scullery, bathroom and living-room together in order to effect economy in plumbing. In only very few instances were bedrooms entered from the living-room. Private balconies from the living-rooms were now general and were so planned that they did not obscure light from the rooms below. A gas copper was fixed in the small kitchenette, and a gas point provided for a boiling ring. Electric light was used for illumination and a limited number of points were provided for irons, cleaners, etc.

A Liverpool Redevelopment Scheme.

He would deal now very briefly with a redevelopment scheme—one of three under consideration—which, he believed, was the first to be submitted to the Minister of Health under Section 13 of the Act of this year. It was an area of about 58 acres. In the eighteenth century the residential district of the city merchants, it was to-day in the heart of the city of Liverpool, and almost entirely populated by the lower-paid wage-earners employed in the business areas of the city. Shops fronted the main streets which formed the boundaries of the district, and a number of houses had been converted for commercial purposes. The schools were congested and extension was urgently required. Most of the houses were insanitary and overcrowded, and those erected during the last half century were at very high density.

A scheme was being prepared for the redevelopment of the whole area by the erection of flats to accommodate the entire population at present housed on the area. Nearly one and a-half miles of streets would be closed, with a resultant annual saving of over £600, which in 40 years would equal the local authority's contribution towards the rehousing of no fewer than 160 families. Provision would be made for a tree-lined boulevard 120 ft. in width which would ultimately connect Queensway—the Mersey Tunnel—and the East Lancashire Road. An area of over 2 acres would be provided for recreational purposes. A new school, boys' and girls' clubs, clinics, meals centres and other amenity buildings would flank this playground. It was hoped that, as well as being used in connection with the new school, it would be available for organised recreation of youths in the district, and perhaps floodlit at night for physical training of men residing near-by—a valuable competitor to the dog track.

New business premises would be erected to replace the unsatisfactory converted buildings at present in use, and thus provide healthier workshops for some of the 10,000 persons who would reside in the replanned area. He had little doubt that this re-development, with the flats spaced between 100 and 200 ft. apart and the intervening space laid out as gardens, was the only satisfactory method of dealing with a difficult problem.

He hoped that it would not be thought that he did not fully appreciate the efficiently designed and well-managed schemes of the various public utility societies and housing associations, so much of which was evident in London, or what had been done by great commercial undertakings, of which the developments at Bourneville and Port Sunlight were classic examples. In the task before us he was confident that a greater measure of success would be attained if both voluntary associations and local authorities worked together in the closest co-operation. For this reason he welcomed those clauses in the new Housing Act which would facilitate this co-operation and assist towards the better management of our great housing undertakings. He also welcomed the references in the memorandum recently issued from the Ministry of Health urging the necessity of skilful and sympathetic management, for without this the full benefit of the added amenities which they as architects could provide would be lost.

He concluded by suggesting some points for their further consideration:—

The necessary powers had now been provided giving the opportunity of dealing simultaneously with every phase of the housing problem. Foremost in importance were those powers by which re-development schemes could be carried out under the Housing Act, 1935. Dare we neglect to use them to their full extent?

In the work to be undertaken during the next ten or twenty years should we allow ourselves to be bound by traditional methods either in design or construction, or even in the methods of management?

Leaving the so-called controversies of the flat versus the cottage and traditional versus modern design to those ethereal experts at Langham-place, our anxiety should be to see that the architectural work which would be involved was carried out by those who owed allegiance to that body which had learned the benefits of rehousing by its removal to Portland-place. They must not be timid about the size of the schemes undertaken. "Let us," concluded the lecturer, "take up the call of 'Save the countryside,' and by great schemes of re-development effect economies in health and other services and establish in our great towns those conditions which we as architects know to be possible and which those engaged in social work know will make for the greater happiness of our people."

DISCUSSION.

Sir Edgar Bonham-Carter, proposing a vote of thanks to the lecturer, having stressed the great value of the work done in Liverpool, and having complimented Mr. Keay and the Liverpool Corporation upon it, said that, notwithstanding the large number of houses built within recent years, there was still a great number of people living in overcrowded and insanitary conditions. Local authorities would have to see that they were properly housed, and this was perhaps the most important thing they had to do. Flats for the working classes were of comparatively recent introduction, and there was still a great deal to learn in connection with their planning, construction, cost, amenities, material and beauty. The last Housing Act provided great opportunities for the improvement of the old parts of our towns, and he was sure that all local authorities would watch the work of Mr. Keay and the Liverpool Corporation with the greatest desire to learn all they could. With regard to the "Cottages *versus* Flats" controversy, there was really no opposition. Cottages, he thought, were most satisfactory for working-class people with a family, but in the centre of towns the necessary accommodation could only be provided by flats. The danger that he foresaw was that such flats, having low rents by the aid of subsidies, might attract more people to the towns. The most important thing was to consider how to prevent the population from becoming more and more urbanised.

Alderman Ewart G. Culpin, Vice-Chairman of the L.C.C., seconding the motion, said he would like to congratulate Mr. Keay on the boldness of his work in design and execution and on his energy in getting the work done. We should never solve the housing problem, he continued, until we got right back to the basic principles of Ebenezer Howard; the garden city was the real solution. It was said that people had to be housed near their work, but why should the work stay where it was? The divorce of man and nature involved a huge number of tenement dwellings in cities. In the removal of works and workers out to the country would be found the real solution of the difficulty. In London the problem of overcrowding was worse than in Liverpool. In some places there were between 300 and 400 persons per acre, and it was impossible to rehouse them on those sites. Speaking as a private individual, he hoped that the clearance and redevelopment schemes of London would be not in acres, nor in tens of acres, but in square miles. In the East End they had to clear and redevelop miles of land involving thousands of houses, and spend millions of pounds. They had to provide not merely playgrounds between the houses, but big open spaces and small parks. Concluding, the speaker urged that more up-to-date methods of construction should be employed in these great undertakings, and congratulated Mr. Keay on having been able to persuade his authority to go in for bold and daring schemes.

Several members and visitors having taken part in the subsequent discussion,

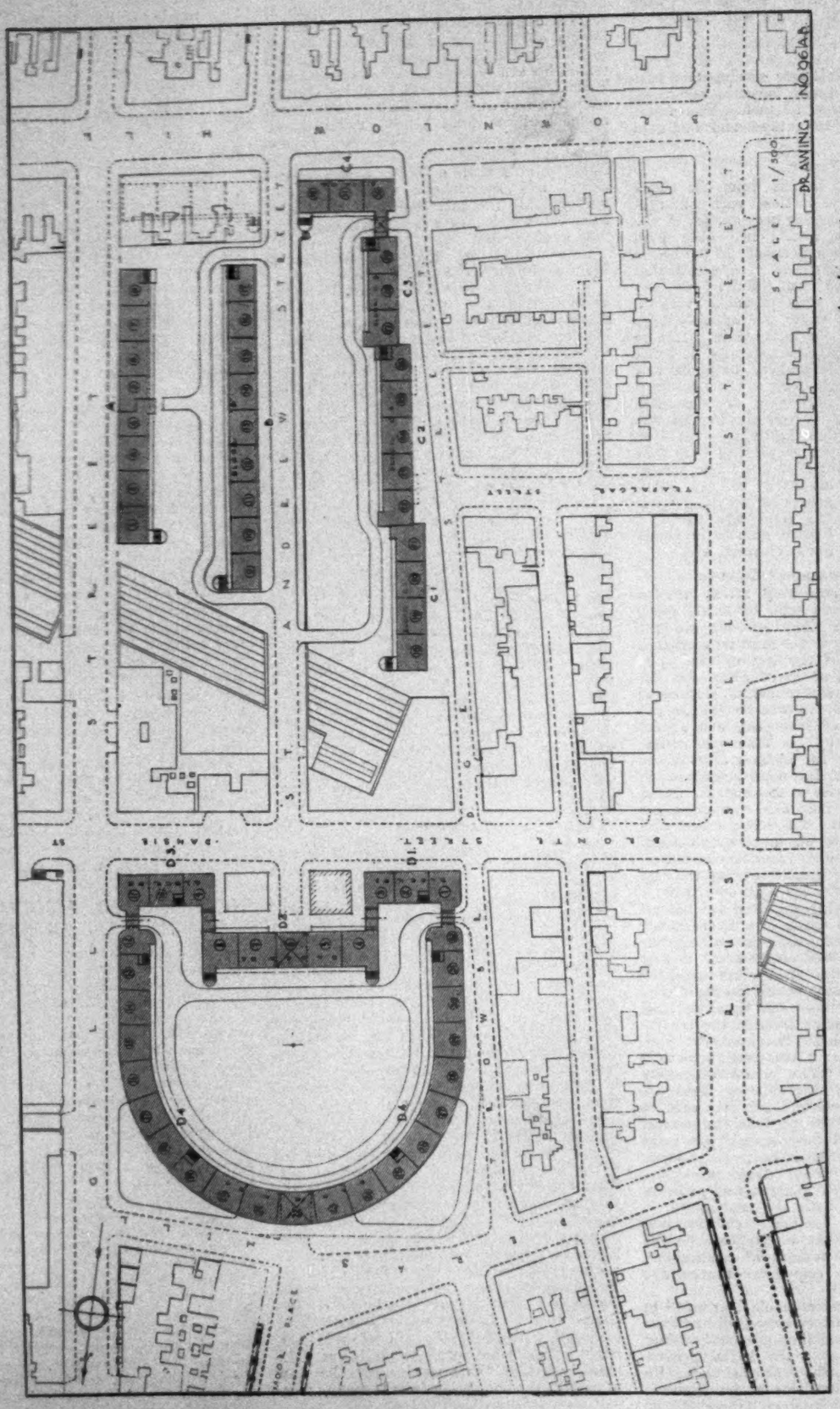
Professor S. D. Adshead, in supporting the motion, said experience showed that to build cottages in the centre of towns was uneconomic and in every way unsatisfactory. In their first scheme for the Duchy of Cornwall estate at Kennington, he and his partner, Mr. Ramsey, provided for five-story flats, but these were wiped out almost as soon as suggested. They began instead with cottages; and now, after the lapse of over twenty years, they were finishing up with five-story tenements, which he considered a more satisfactory solution. He had made an attempt to introduce ten stories, but was again defeated and had to be content with five. With ten-story buildings, of course, one had a larger amount of sunlight and of open space, and could house more people on the site.

Mr. Keay, in briefly responding to the vote of thanks, paid a tribute to his staff, which, he said, included a number of students from the Liverpool School of Architecture, whose modern outlook was very helpful to him.

The President then put the vote of thanks to the meeting, which was carried with acclamation.

INCORPORATED ASSOCIATION OF HOSPITAL OFFICERS.

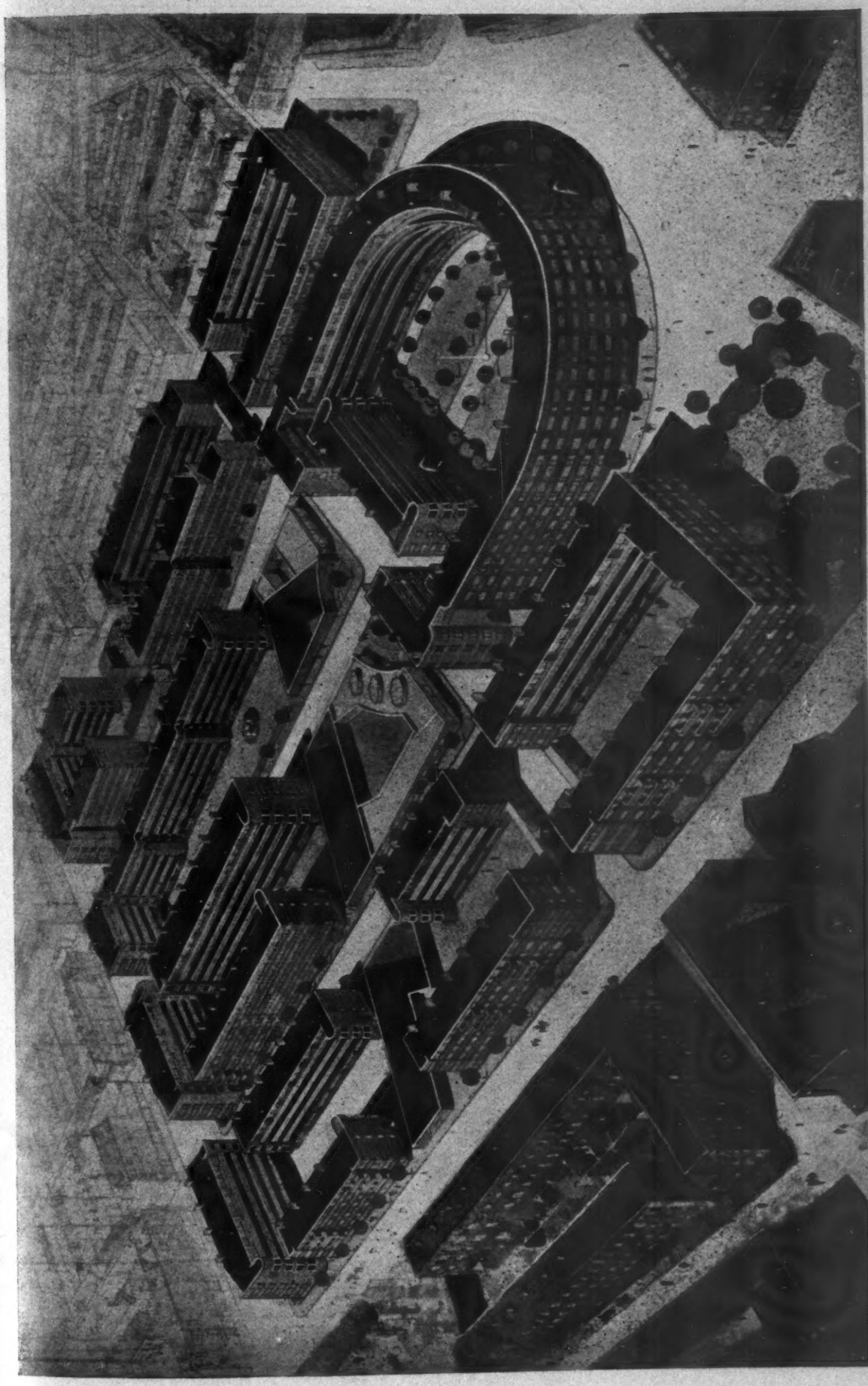
Mr. Charles M. Power, secretary of the Westminster Hospital, speaking at the annual conference of this Association at St. Bartholomew's Hospital, E.C., on some problems in modern hospital construction, drew special attention to the out-patient department. If there was any department which could with some foundation be criticised adversely, he said, it was the out-patient department. Under the present system it was difficult, with the best of organisation, to prevent that prolonged wait of which the public complained. At Westminster Hospital they were considering a system which, though not entirely revolutionary, had not been adopted so completely in any other hospital, so far as he knew. They suggested that there should be exactly the same service of medical and nursing personnel available for out-patients as existed for in-patients. Each general surgical and medical unit, and each special surgical or medical unit, would have its wards and its out-patient clinics side by side. There would be available for out-patient service in each surgical unit the senior surgeon, the assistant surgeon, the chief assistant, the registrar, and the house surgeon, and a similar service for the medical and special units. The out-patient department, as they knew it, would in such a scheme disappear. Its place would be taken by a small casualty clearing station where a full-time paid staff would give first treatment where necessary, pending an appointment for examination by the consultant in the appropriate unit.



ST. ANDREW'S GARDENS REDEVELOPMENT SCHEME, LIVERPOOL: Hatched part of Plan shows present development.

MR. L. H. KEAY, F.R.I.B.A., Director of Housing, Liverpool.

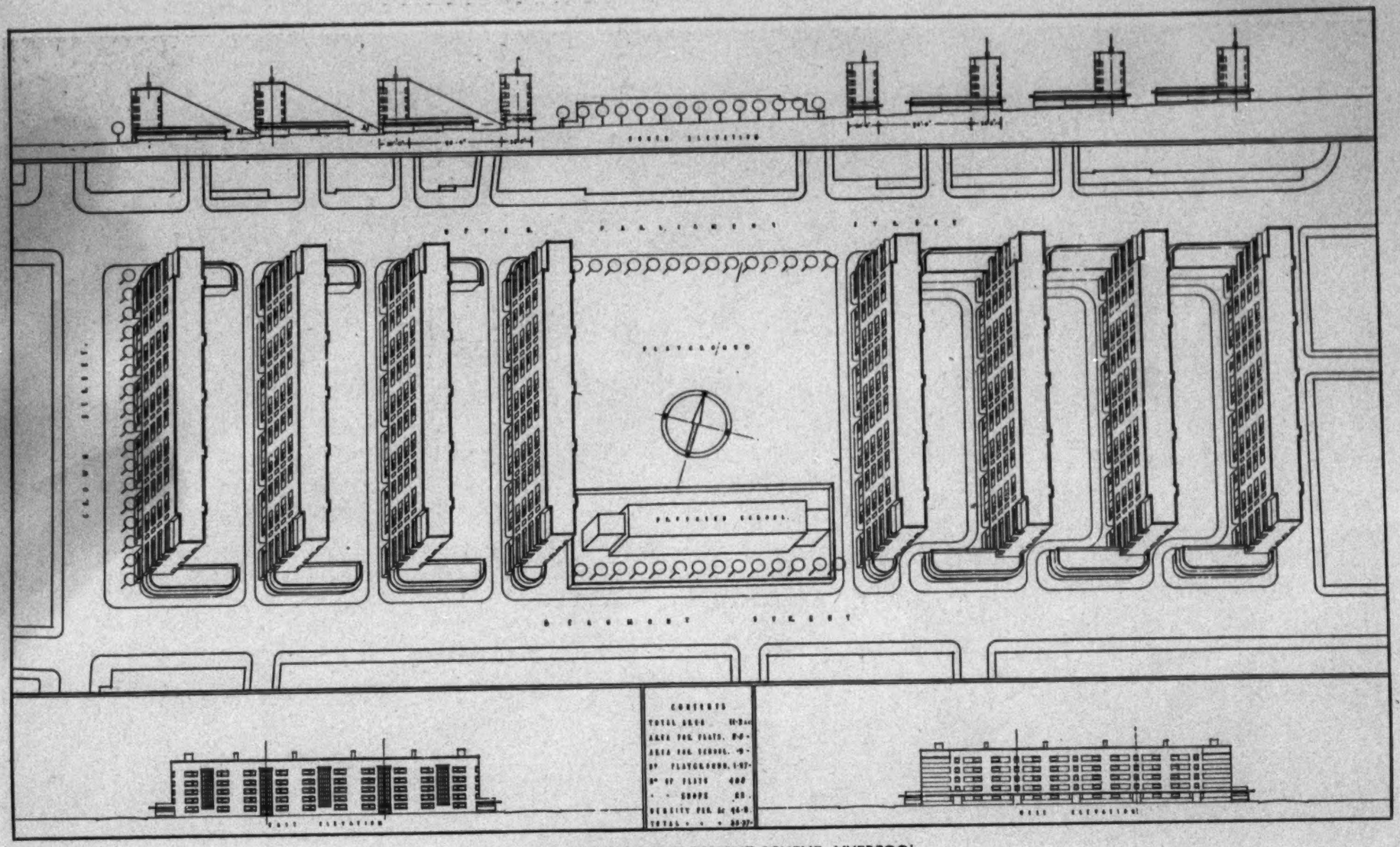
(See page 923.)



ST. ANDREW'S GARDENS REDEVELOPMENT SCHEME, LIVERPOOL: Perspective View showing further contemplated Development.

MR. L. H. KEAY, F.R.I.B.A., Director of Housing, Liverpool.

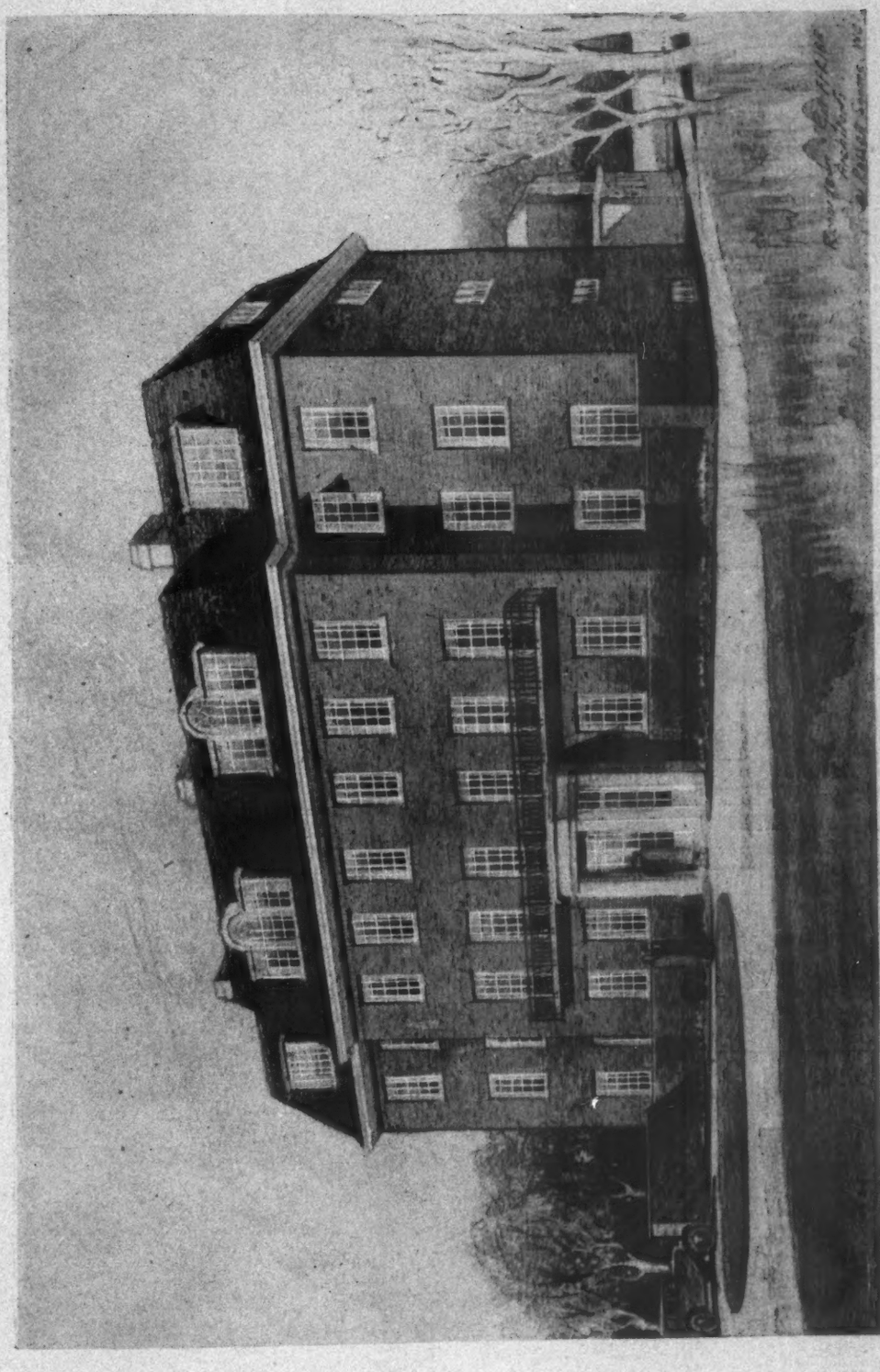
(See page 923.)



BEAUMONT STREET REDEVELOPMENT SCHEME, LIVERPOOL.

MR. L. H. KEAY, F.R.I.B.A., Director of Housing, Liverpool.

(See page 923.)



"THE HALL," GROVE END ROAD, N.W.

MESSRS. RICHARDSON AND GILL, FF.R.I.B.A., Architects.

(See page 923.)

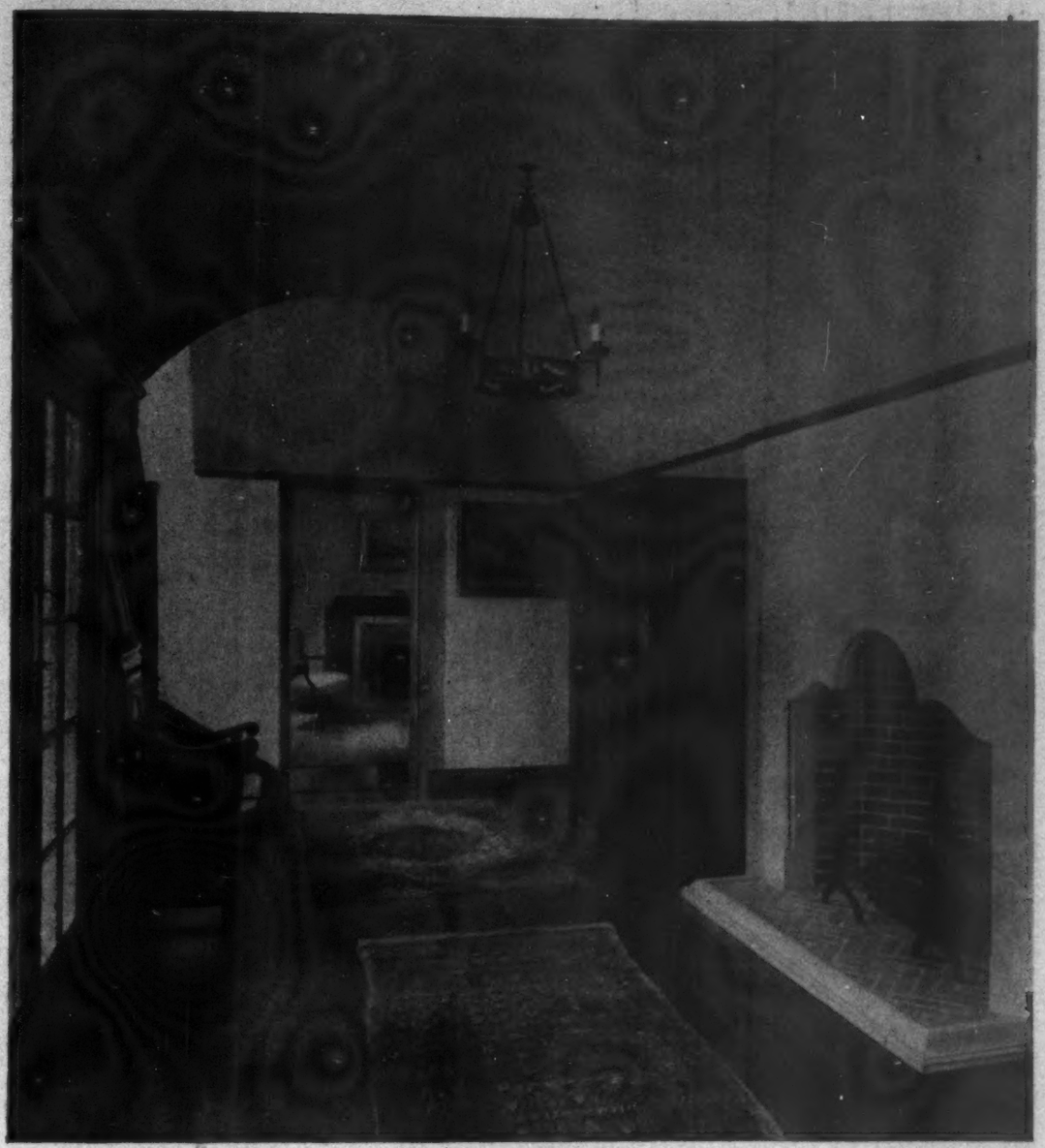
GARDEN FRONT.

ENTRANCE FRONT.

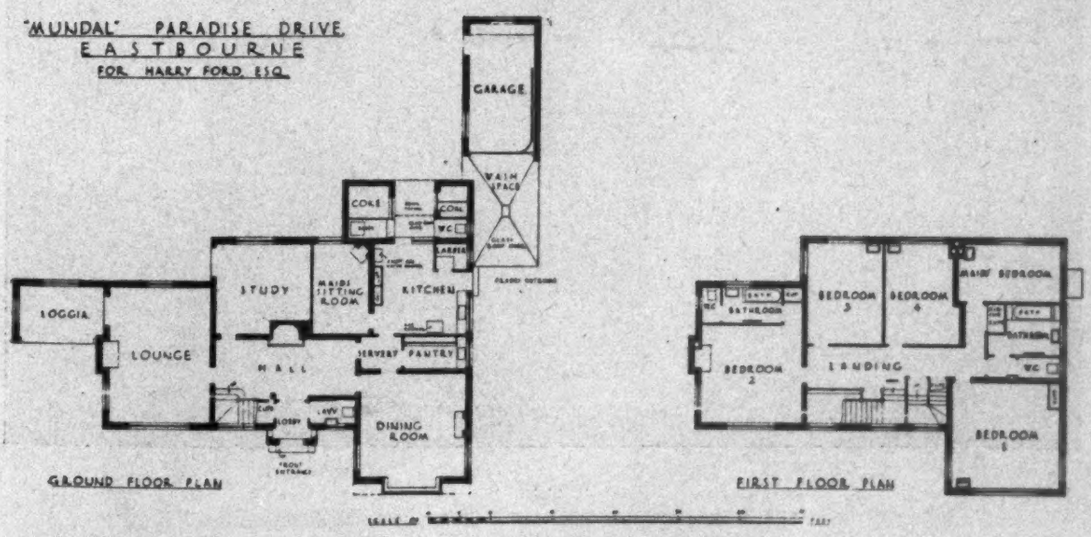
"MUNDAL," PARADISE DRIVE, EASTBOURNE.

MR. JOHN D. CLARKE, F.R.I.B.A., Architect.

(See page 923.)



THE HALL, LOOKING INTO LOUNGE.



"MUNDAL," PARADISE DRIVE, EASTBOURNE.

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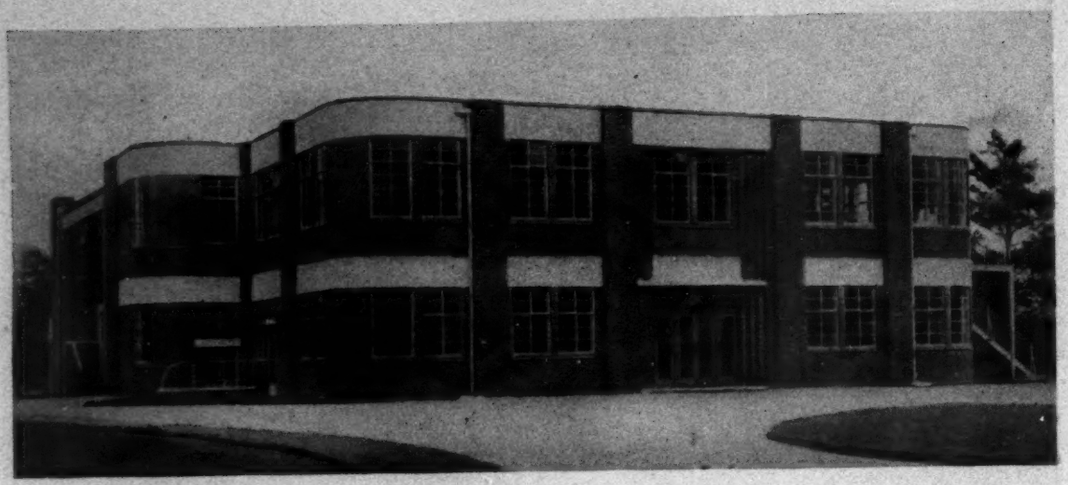
(See page 923.)



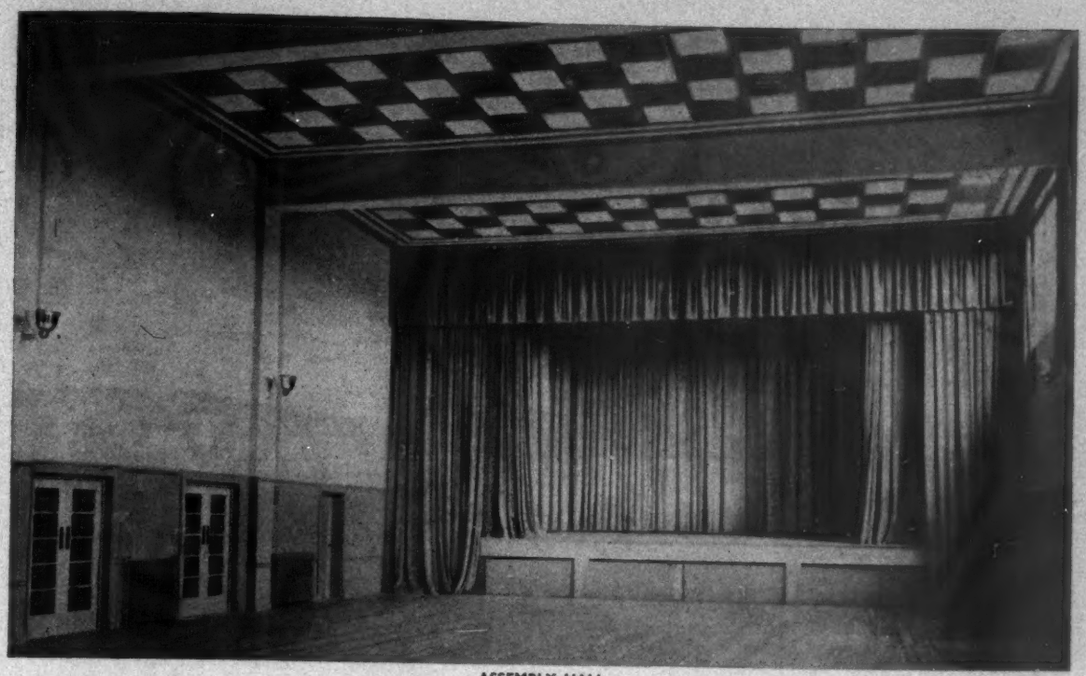
ENTRANCE FRONT.

REAR VIEW.

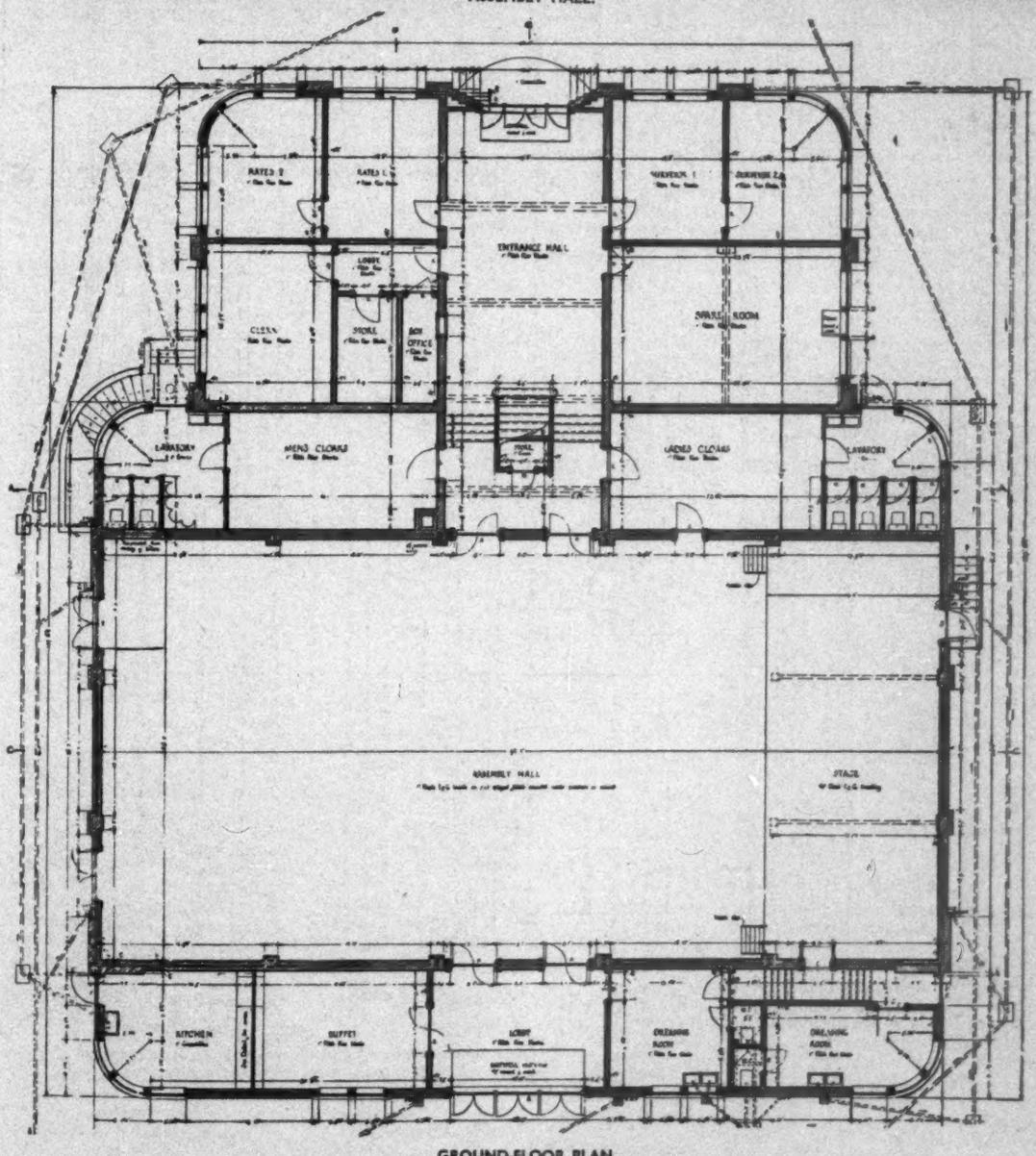
FETERSFIELD TOWN HALL AND MUNICIPAL OFFICES.

THE HON. JOHN SEELY, F.R.I.B.A., AND MR. PAUL PAGET, A.I.A.A., Architects.

(See page 923.)



ASSEMBLY HALL.

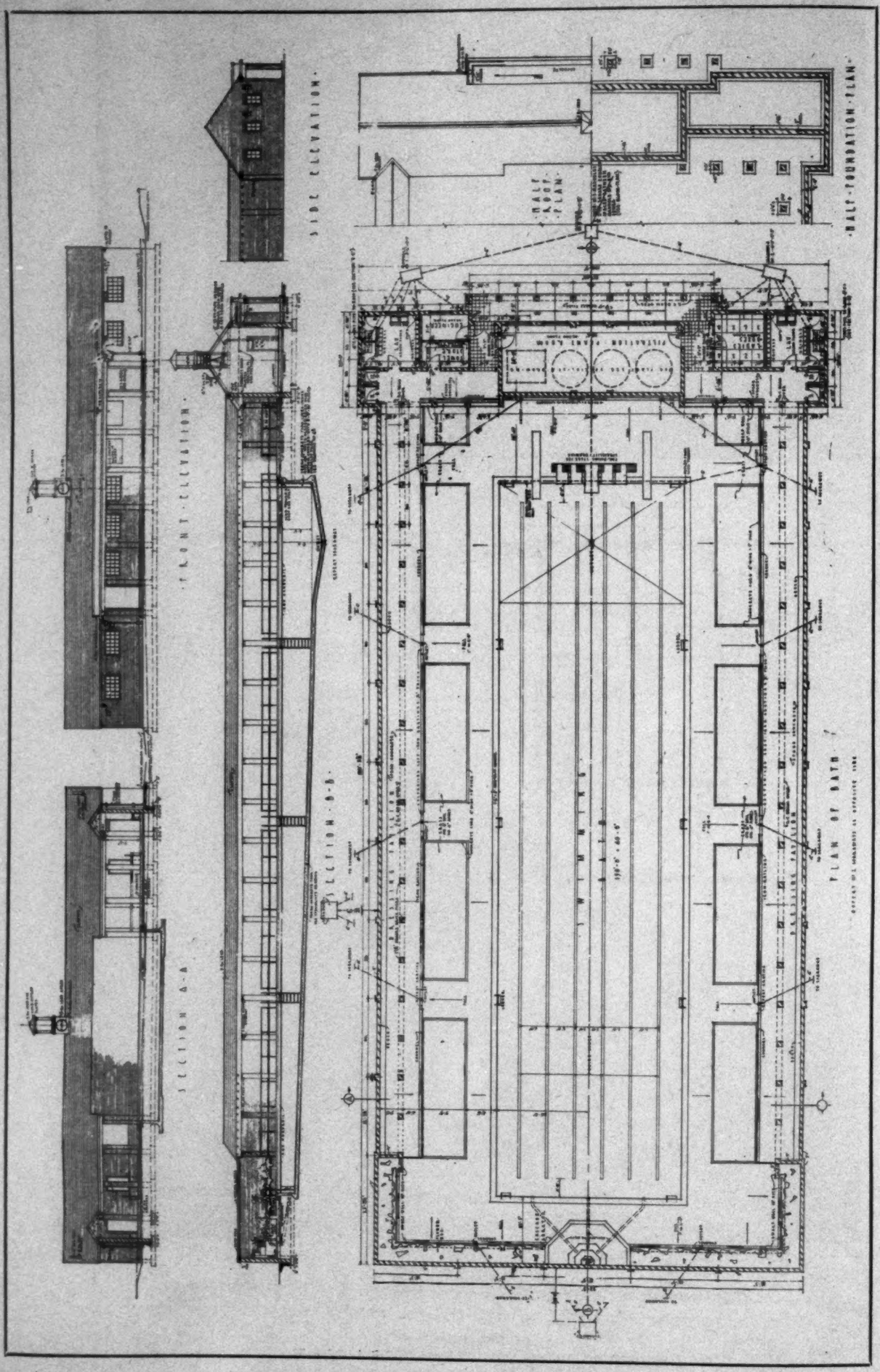


GROUND-FLOOR PLAN.

PETERSFIELD TOWN HALL AND MUNICIPAL OFFICES.

THE HON. JOHN SEELY, F.R.I.B.A., AND MR. PAUL PAGET, A.I.A.A., Architects.

(See page 923.)



OUNDLE SCHOOL OPEN-AIR SWIMMING BATH.

MR. KENNETH M. B. CROSS, M.A., F.R.I.B.A., Architect.

(See page 923.)

ILLUSTRATIONS

PLATES

Liverpool Redevelopment Schemes.

We give this week a number of illustrations of redevelopment schemes in Liverpool, shown in conjunction with Mr. L. H. Keay's paper on "Housing and the Redevelopment of Central Areas," read at Monday evening's meeting of the R.I.B.A. The St. Andrew's Gardens scheme is shown as completed up to the present time, and also by a perspective indicating further development which is contemplated in this area. We also illustrate one of the most recent layouts—that of Beaumont-street—which in Mr. Keay's view is the most desirable method of laying out an estate on which flats are to be built. The buildings all run due north and south, the living rooms facing west, and there is a very large reservation in the centre to be used as a playground in connection with the scheme, or as a school, if such a building is required.

"The Hall," Grove End-road, N.W.

This block consists of eight flats, with two smaller flats on the lower ground floor. It being so low a building there is no steel frame, the walls being solid brickwork, with the resultant lessening of vibration and noise and conduction of sound. The flats have been planned with entrance hall (also used as dining-room), one large reception room, three bedrooms, kitchen and service staircase.

The general contractors are Messrs. C. Tavener and Son, and the following firms were associated with the work: Caxton Floors, Ltd. hollow tile floors; Abbey Heating Co., heating; Bective Electrical Co., electrical installation; Waygood-Otis, Ltd., lift; Crittall Manufacturing Co., windows; Doulton and Co., Ltd., sanitary fittings.

Messrs. Richardson and Gill, FF.R.I.B.A., are the architects.

"Mundal," Paradise-drive, Eastbourne.

This house has been erected for Mr. Harry Ford. The walls are 11 in. hollow, covered externally with rough plaster, and the roofs are covered with hand-made sand-faced tiles. The whole of the central heating is carried out with concealed panels in the ceilings. The general contractors were Messrs. Walter Llewellyn and Sons, Ltd., of Eastbourne, and the following firms were associated with the work: Humphries, Jackson and Ambler, Ltd., steel casements and leaded lights; S. Shew and Co., wall tiling; G. N. Haden and Sons, Ltd., Eastbourne, domestic hot water and heating.

Mr. John D. Clarke, F.R.I.B.A., of Eastbourne, is the architect.

Petersfield Town Hall and Municipal Offices.

This building, which stands in Heath-road, replaces out-of-date accommodation of the various council departments situated in High-street and Swan-street, and also provides Petersfield with a fine hall for its Annual Musical Festival, which has previously been held in cramped quarters in the Drill Hall. The front portion of the building houses the rates and surveyor's departments, and also a small public library on the ground floor, and the council chamber, clerk's and committee rooms on the first floor, with a small hall for lectures, etc. The large assembly hall is situated at the rear and is provided with a well-equipped stage, and has a good suite of cloak-rooms, dressing-rooms, buffet, etc., for public and performers. The hall has a maple floor for dancing.

The building is of brick and steel construction, with precast concrete floors and roof. Local stocks of pleasing brown colour were used for the external facings, with bands of concrete painted with "Cementone." A feature of the building is the use of bright colour, particularly in the ceiling of the assembly hall, which is distempered in three colours in a chessboard pattern, direct on the concrete.

The general contractors were Messrs. Rigg and Remington, Ltd., of Westminster, and among the principal suppliers were: C. J. Pell and Company, steelwork; The Rapid Floor Company, Ltd., floors; The Crittall Manufacturing Company, windows; Horsley Smith and Company, Ltd., wood floors; Henry Hope and Sons, Ltd., door furniture; B. Burnet and Company, Ltd., stage curtains; J. Seymour Lindsay, lighting and fittings.

The architects are the Hon. John Seely, F.R.I.B.A., and Mr. Paul Paget, A.I.A.A.

Open-Air Swimming Bath, Oundle School.

The entrance to this swimming bath is so arranged that bathers would pass direct to the dressing pavilions before reaching the bath surround, so that mud is not brought on to the surround, which is reserved for the use of bathers in bathing costume. A railing separates the dressing pavilions from the surround proper, and a drainage channel is also provided between the dressing pavilions and the swimming bath surround. The filtration plant is housed in a building designed for this purpose at the deep end of the bath, and consists of the usual water purification plant consisting of filters, chemical treatment tanks, chlorine apparatus; and the aerator in the form of a cascade is placed at the shallow end of the bath.

There is dressing accommodation for 200 boys, and provision is also made for dressing boxes for ladies and also lavatory accommodation. An engineer's room and towel store complete the accommodation. The swimming bath, 150 ft. by 40 ft. and 8 ft. 6 in. deep at the deepest point, is finished with white glazed bricks, with provision for teak steps and handrail around the bath at water level, scum trough at the deep end, non-slip coping, diving stage with metal guard rails, and the concrete surround is embellished with grass plots as shown. The enclosure wall and the piers are of multi-coloured brick. The roofs to the shelters and buildings are covered with green Westmorland slating, and a small bell turret is also included. Messrs. Trollope and Colls, Ltd., Dorking, Surrey, are the contractors.

Mr. Kenneth M. B. Cross, M.A., F.R.I.B.A. (Messrs. A. W. S. and K. M. B. Cross), of New Bond-street, W.1, is the architect.

Quarry Hill Tenements, Leeds.

These flats, of which we show a model on page 906, are being erected on the Mopin system of construction from the designs of Mr. R. A. H. Livett, A.R.I.B.A., Housing Director, Leeds.

SOCIETIES AND INSTITUTIONS

R.I.B.A.

Council Minutes.

Following are notes from the minutes of the Council meeting held on November 4:—

All Hallows Church, Lombard-street.—It was agreed to support the memorandum prepared by the conference of representatives of learned societies, presided over by Viscount Esher, protesting against the proposed destruction of All Hallows Church, Lombard-street.

The Use of Structural Steel in Building.—Mr. W. Goodesmith (A.) and Mr. P. J. Waldram (L.) were appointed to represent the R.I.B.A. on the British Standards Institution Technical Committee on the Use of Structural Steel in Building, in addition to Mr. S. Pointon Taylor (F.).

The Standardisation of Linoleum.—Mr. O. P. Bernard (L.) was appointed to represent the R.I.B.A. at a meeting called by the British Standards Institution to consider the Standardisation of Linoleum, and on Technical Committee B/37, should it be decided to proceed with the preparation of a British Standard Specification.

R.I.B.A. Architecture Medals: Royal Institute of the Architects of Western Australia.—It was reported that the jury appointed to make the award of the R.I.B.A. Architecture Medal for the area of the Royal Institute of the Architects of Western Australia for the three years ended December 31, 1934, had made their award in favour of "Newspaper House," St. George's-terrace, Perth, designed by Messrs. Hobbs, Forbes & Partners. The award was formally approved by the Council.

Election of Students.—The following Probationers were elected as Students of the R.I.B.A.: N. G. St. G. Everard (Auckland Univ. Coll.), W. B. Galloway (Univ. of London), Miss D. E. Gelling (Lvrpl. Sch. of Arch.), R. A. Kayll (Univ. of London), J. C. Mackay (Glasgow Sch. of Arch.), P. F. Nightingale (Univ. of London), L. J. Young (special exemption).

WELSH SCHOOL OF ARCHITECTURE.

"Heat, Health and Comfort."

Mr. Raymond Walker, of the Coal Utilisation Council, lectured to the Welsh School of Architecture, the Technical College, Cardiff, on Wednesday, November 13, on "Heat, Health and Comfort." Members of the Central Branch of the South Wales Institute of Architects were also invited. Mr. W. S. Purchon, M.A., F.R.I.B.A., President of the South Wales Institute of Architects and Head of the Welsh School of Architecture, presided. The lecturer said that, in spite of the accusations against the coal fire relating to air pollution, there was no doubt that we could not do without it until some efficient substitute could be found, or until the question of smoke emission could be dealt with. The Coal Utilisation Council had allocated between £4,000 and £5,000 for research with the aim to reduce the output of smoke from open fires, and at the present time Dr. Sinnatt, of the Government Fuel Research Station, was tackling the subject from a scientific angle. He solicited the co-operation of architects in helping the coal trade to improve the design of coal-burning apparatus, and stressed the value of the architect in industry, giving as an instance the case of a manufacturer who discovered a market for which he was totally unprepared as a result of getting first-class designers to make a new form of stove he was producing æsthetically satisfactory.

A hearty vote of thanks was passed to the lecturer.

THE SOCIETY OF ENGINEERS.

"Sinking Monoliths for Dock and Quay Walls."

A paper on this subject was read by Mr. G. H. Gardner, A.M.S.E., at an ordinary meeting of the Society of Engineers (Incorporated), held at Burlington House, W., on November 4. The author opened his paper with remarks on the preparation of the site, and the laying-out of rail and crane roads. He then indicated the necessity and the usefulness of trustworthy boring data about the site. Discussing the design of a monolith shoe and blockwork, the author stressed the importance of having a strong shoe and dealt with the construction and erection of it. Points to be observed in the designing of blocks and shuttering and in construction of the block-making yard and gauging station were given. Attention was drawn to the necessity of adequate spacing between monoliths, and the author then discussed the type of plant required and the methods to be adopted in order to sink a monolith successfully. Hints were given how to sink an obstructed monolith and how to rectify one should it sink out of level. The author described the block building, and passed on to the sealing of the monolith walls. The desirability of a long period of time between completion of sinking and commencing of sealing a monolith was emphasised. Attention was also drawn to the necessity of clean walls in order that a perfect seal might be effected. Illustrations were then given of what may happen to badly designed or unskilfully sunk monoliths while being sunk. The author concluded his paper with remarks on the closing of spaces between monoliths and their alignment for superstructures.

THE NEW HOUSING ACT AND OVERCROWDING

We made reference in our last issue to the series of five memoranda which the Minister of Health has issued for the purpose of outlining the scope and purpose of the new Housing Act, and explaining in some detail the nature of local authorities' new duties and the best way of performing them.

The main subject matter is directed to assisting local authorities in the planning and early initiation of the house-to-house survey, on which positive ascertainment of the total need for action will be based, as well as in other important steps which are necessary to deal with the evil of overcrowding. Meanwhile, proposals are already being submitted to the Minister for rehousing schemes to abate overcrowding. Activity by some local authorities under the Housing Act, 1935, has already started, and actual building operations, the Minister has already stated, will not prejudice any claim to subsidy which local authorities may wish to submit at a later stage, if subsidy would otherwise have been payable.

Five separate memoranda have been issued, which, together, cover the whole of the principal objects of the Act. They are as follow :—

A.—General Memorandum.

THE POSITION OF OWNERS. — The first memorandum is general in character and describes the broad intentions of the Act, its effects on existing housing legislation and the main alterations in present administrative procedure which are necessary to translate it into effect. Among other points it explains the modifications which have been made in the law governing slum clearance. Sir Kingsley Wood refers in some detail to the position of owners when property has to be taken or demolished. For instance, the Act of 1935 gives the Minister power, when a house though properly included in a clearance area or order as quite unfit for habitation has nevertheless been as well maintained as was practicable in the circumstances, to direct the local authority to make a special payment in recognition of the effort to maintain the house. Moreover, every owner of property included in a clearance order must in future be served by the local authority with a statement of the grounds on which his property was so included, at least two weeks before the Minister's public local inquiry is held; and no dwelling-house can be included in a clearance order only on the ground of its congesting other properties without being in itself unfit—a new provision which ratifies what has been the Minister's administrative practice. Any owner who appears at the Minister's public inquiry in support of his objection may, if his property is condemned as unfit, obtain from the Minister—on making a written request to him—a statement of the grounds on which the property was so condemned. When an owner's land is taken compulsorily there will no longer be any reduction in the compensation paid to him because the land is to be used for working-class rehousing.

COMPENSATION FOR SHOPKEEPERS.—Attention is called to the position of retail shopkeepers and others affected by clearance operations, and Sir Kingsley Wood states that he hopes every local authority will exercise the power of making reasonable allowances in suitable cases, and that he is prepared to sanction loans to cover expenditure by a local authority in the exercise of their powers under the provisions of the Act.

HOUSING ASSOCIATION.—The Minister also calls attention to the new facilities and arrangements for the work of housing associations in conjunction with the local authorities, and to the fact that Section 29 of the Act now enables advances to be made to them by the Public Works Loan Board to a maximum of 90 per cent. of the value of houses to be erected by them. Sir Kingsley Wood also commends the scheme set up by the Act empowering local authorities to establish a Housing Management Commission.

B.—The Prevention and Abatement of Overcrowding.

The second memorandum deals in detail with the measures which will be taken throughout the country to abate overcrowding and to enforce the new maximum standard of occupation of any dwelling-house which the Act makes it a punishable offence in future to infringe. It explains the procedure by which every local authority will now proceed to ascertain, by survey of all the dwelling-houses in their area, the exact extent and situation of overcrowding and the amount of new accommodation requisite to enable it to be finally abated. The application to the individual house of the new formula of overcrowding is well illustrated by examples, and the responsibilities of the local authority to take proceedings when the formula is exceeded, together with the statutory liabilities of owners and tenants to see that it is not exceeded, are explained in summary.

SAFEGUARDS AND PROSECUTIONS. — Sir Kingsley Wood explains that overcrowding existing at the appointed day is not an offence until alternative accommodation has been offered and refused, but the creation of overcrowding after the appointed day in a house where it does not exist on the appointed day would be punishable. It is pointed out also that safeguards are provided to cover the case where a family living in uncrowded conditions becomes overcrowded in course of time owing to increases in the number or ages of the children. Attention is also called to the temporary modifications which are permitted in connection with the circumstances of holiday resorts when "it will be necessary for the local authority to exercise special care." There are attached to the memorandum model forms and records in which the detailed information obtained by the local authorities' inspection of houses in their district may be collated and registered. The duty of the local authority to take steps, so far as other agencies are not already doing so, to secure the provision of the additional accommodation needed to make the enforcement of the new standard a reality is also emphasised.

C.—Redevelopment of Overcrowded Areas.

The third memorandum amplifies the rehousing aspect of the local authorities' duties, by explaining their new power to schedule the "hard core" areas in towns for drastic redevelopment, when lesser remedies are unlikely—as it is recognised in many of the built-up urban areas they must be unlikely—to provide effective remedy. The intimate relation between redevelopment and town planning is emphasised and the nature and treatment of the typical "redevelopment area" is described; the several stages of declaration of the area, publication of proposals, inquiry by the Minister and execution of the confirmed redevelopment order are all fully explained, together with the basis of compensation to private interests affected by the exercise of compulsory powers.

THE IMPORTANCE OF PROPER PLANNING.—Sir Kingsley Wood emphasises the importance of proper planning. He states that the provisions in the Act "will arm local authorities with the necessary power to clear their congested areas and redevelop them on modern lines," and that it is essential that the Housing Committee and the Town Planning Committee should work in the closest co-operation. It is also explained that owners may submit schemes for the redevelopment of their own property. So far as the erection of flats for rehousing is concerned, it is stated that the Minister would only be prepared in exceptional circumstances to approve of blocks of flats exceeding five stories in height, and that he considers it to be most desirable that each flat should, so far as possible, be equipped with a private balcony.

D.—Financial Provisions.

The fourth memorandum is concerned with the financial provisions of the new Act and the new Exchequer subsidies which will be available in connection with the work of rehousing those displaced from overcrowded dwellings. Each of the three forms of subsidy to be made available is described: the "flats" subsidy, when rehousing has to be provided on expensive sites, in blocks of flats of three or more stories; the special rural subsidy, where accommodation has to be provided for the agricultural population to relieve overcrowding; and the subsidy payable for rehousing on normal sites where the conditions of the district and the burden likely to be imposed upon it necessitate Exchequer assistance.

So far as rehousing on central sites is concerned, the Minister says that generally it is uneconomic to erect cottages on central sites; but he also points out that land is usually available within easy reach of industrial parts, and that it is preferable for the population, in such circumstances, to be accommodated on cottage estates. Attention is particularly called to the special claims of rural districts so far as the housing of the agricultural population is concerned, and to the special subsidies which will be given for this purpose.

E.—Consolidation of Housing Contributions and Accounts.

The fifth memorandum explains the new consolidation of local housing accounts, the object of which is to free the local authorities from the diverse special conditions which were still attaching to the different subsidies, and thus affecting the rents of subsidised houses, under earlier Acts, and to enable them to administer the whole of their housing revenue from subsidy, rate contribution, rents and all sources, to the best advantage throughout the district as a whole. The special conditions hitherto applying are, it is pointed out, replaced by general obligations as to letting to be observed by local authorities in respect of their houses as a whole. "Each local authority," says the Minister, "should review, in the light of these general obligations, the rents at present charged for their houses. It will be seen that the Act contemplates the fixing of standard rents in relation to the general level of working-class rents in the locality. It will, however, be open to local authorities to fix differing standard rents for different types or groups of houses, and to grant rebates from the standard rent in particular cases according to the circumstances of the tenants. A continuous supervision of rents should be exercised so as to ensure that any alterations justified by changes of circumstances are made from time to time."

The Memoranda are being issued to local authorities with a Circular and other documents including Provisional Regulations entitled "The Housing Acts (Overcrowding and Miscellaneous Forms) Provisional Regulations, 1935." These Regulations prescribe the various forms (such as the form of licence for temporary overcrowding) which a local authority will use when administering the provisions relating to overcrowding. The Regulations also contain the prescribed form of summary of the provisions relating to overcrowding which, after a certain date, must be inserted in the rent books of all working-class houses. The date for this purpose will be six months after a day to be fixed later by the Minister.

The Memoranda are obtainable from H.M. Stationery Office at the following prices: A, 4d.; B, 6d.; C, 2d.; D, 2d., and E, 4d.

Surveys of Overcrowding.

In a circular just issued, the following dates are prescribed, namely :—

For completing the inspection	April 1, 1936.
For submitting a report on the results of the inspection	June 1, 1936.
For the submission of housing proposals to remedy the overcrowding revealed by the survey	August 1, 1936.

The dates fixed are all limiting dates. They have been selected so as to allow reasonable time to local authorities to carry out in an orderly way the duties which they have to perform.

THE LONDON SOCIETY

"THE MODERN RENAISSANCE OF ANCIENT ARCHITECTURAL SCULPTURE."

A LECTURE on this subject was delivered by Professor S. D. Adshead, F.R.I.B.A., before the London Society on Friday last.

"I gave my lecture this title," commenced the speaker, "because it afforded me an opportunity of elucidating a theory that has frequently been expounded but not well understood—that 'There is nothing new under the sun.' I have confined my observations to that kind of sculpture which is perhaps best known as 'architectural sculpture,' but in so doing I am aware that it is a very thin line which separates architectural sculpture from the so-called 'gallery piece,' and it is almost as thin a line that separates architectural sculpture from mere carving."

The whole history of architecture showed us that there had been a slow and continual growth, not merely the growth of the plant from seed to flower, but the growth that had resulted from changes in succeeding generations; and just as in the evolution of the human race there had been reversions to primitive forms, as well as continual repetitions of the same form, perhaps reincarnations of remote ancestors as well as repetitions of father and son, so in the history of architecture we saw both gradual development and sudden reversions to styles and methods of expression practised in a remote past. But an architectural revival might be merely a cold reproduction of a past style, or a rejuvenation—a re-entry in modern vestments of an attitude towards life found in some early phase of human existence.

"The revival of a style of architecture," declared the speaker, "may mean a desire to revive the fashions of our ancestors, involving, as it may well do, the sacrifice of a comfortable home to life in an inhospitable shell; or it may mean the sweeping away of meaningless complications and a return to some simple elemental form. Every student of architecture knows that Egyptian, Assyrian and Greek architecture developed by a continual growth; that, without being too fastidious about minor consequences, the first real revival in European architecture was when the cloak of Greek architecture was refashioned to fit the more robust limbs of Rome. All this is well known, but not so well known and less well understood is what happened to the threadbare garments of the ancient Roman, as, wandering through Europe, Asia and Africa, he, dependent upon his innate ingenuity, cut new clothes out of the old cloth, and in the process left us those vigorous styles which we describe as Byzantine and Romanesque, and out of which by a slow but natural development was evolved the great Gothic style.

"The next revival was called the Renaissance, when Italy, France and England, lost in the by-paths of this great Gothic style, dressed themselves in new garments snatched from the clothes chests of a once magnificent Rome: and so we get the Renaissance of the 15th century—its birth, adolescence, and decline; and, again, in the 18th century, we get other and absolutely new revivals of Greece and Rome."

Architectural Revivals.

The history of architecture during the 18th and the first half of the 19th century was nothing more than a history of revivals, fresh versions of the arts of Greece and Rome. Some of these revivals were the results of the personal investigations of well-known men. We had the Adam Brothers with their entirely new view of Roman architecture; Stewart and Revett reviewing ancient Greece; and innumerable personal revivals of the Renaissance work of Italy. Added to these, we had the Gothic revival of the middle of the 19th century, its vision at first merely confined to forms—for it was not until late in last century that the spirit which underlay the Gothic style was dimly discerned. So that a glance down the vista of the ages showed us that from the remote past, right on to the commencement of the present century, the art of architecture, and with it sculpture, had developed by a continuous series of separate growths, each of which had passed through a period of youth, adolescence, and decline: that in the recent past, those separate growths followed each other with hastening frequency, until there came to be as many revivals as there were architects whose abilities and opportunities had provided them with the means of original survey.

"Since the commencement of the present century, however, the revivals of the accepted styles of architecture—whether simply copied, or mutilated and adapted to modern conditions—have been waning and slowly coming to an end. The logical Frenchman and the aspiring Scotchman were the first to rid themselves of the trammels of style. Men like the architect of the Printemps in Paris, and like Walton, the architect of the original Kodak Company building in Regent-street, together with Mackintosh, the architect of the Glasgow School of Art, were the rebels who trod upon the word 'style'; and what did they give us? A new kind of building which, if it is reminiscent of anything, is reminiscent of things that may be described as primitive, hoary, romantic, and mystic—buildings having walls like strongholds or, on the other hand, fairy palaces of glass. Their architects writhed and racked and riddled their brains in an effort to extract ornament out of the patterning of the kaleidoscope of shapes derived from the simplest vegetable forms. On no account must anything resemble anything that had appeared before. The French called it 'L'Art Nouveau'; the English, too fearful of its being regarded as a style, refrained from giving it a name and called it 'Craftsmanship.' Later, it was described as 'Functional,' as opposed to what was described as 'Period' architecture, though it was only when consciously or unconsciously it assumed a form borrowed from the past that it held the human interest, so absolutely essential to any phase of architecture worth the name; and here, at the risk of repeating myself, let me state clearly that no architecture and, as a corollary, no architectural ornament, can have any real value if it does not awaken some reminiscence of human effort.

"A style of architecture which has developed quite naturally through many centuries of human endeavour can be the subject of a revival once, but never twice. Repeated more than once it becomes trite, stale and loathsome; particularly so if the revival is little more than a mechanical reproduction. To be a success, a revival must be an entirely new view, and if the word 'original' used in this reference means anything, an essential of all buildings that can be described as 'architectural' is that they be original.

"Search all the papers that illustrate modern architecture, inspect the architectural schools, glance at the most modern of our buildings, and, with rare exceptions, you will not find a single illustration of a new building that can be said to be a reproduction of a work in a past style. And yet, 'there is nothing original under the sun.' Where do we get our copy? From what source do we obtain the ideas which go to make architectural sculpture?"

Modern Architectural Sculpture.

Just as modern architecture claimed to be functional and entirely dependent upon requirements, so modern architectural sculpture might claim only to represent incidents reminiscent of elemental forms. The architectural sculptor of to-day must be child-like and direct; he must make his statement in as few words as possible; he had no use for indigestible sophistry, for unrelated incident, for commonplace realism, or for faded beauty. His work must be in tune with the sublime moments of the human race; it must evoke emotions that are felt but not understood. It must avoid statements of fact and concrete realisation, and there must be no "sob-stuff," no morbid statement, no crocodile tears.

"And now," said the lecturer, "having made these generalisations, let me proceed to a closer examination. From whence does the modern sculptor obtain his copy; or, if this is too crude a word, let me call it his inspirations? For these he goes to the most ancient of civilisations—the ruined cities of Central America, the ancient buildings of China and Hindustan, to the inimitable Egyptian, to the earliest works of the Greeks, and to the Romanesque, the Byzantine, and the early beginnings of what became the great Gothic style. But it must not be supposed that all so-called modern architectural sculpture is drawn from the same source, or uses the same means to attain the same end. Although it must conform to the same general conditions as to naïveté and directness, it has as many phases as there are leaders in the movement."

The lecture concluded with some slides of the work of some modern sculptors.

WEST YORKSHIRE SOCIETY OF ARCHITECTS

"Modern Architecture."

Mr Victor Bain, President, took the chair at a meeting of this Society, held in Leeds on November 14, when a lecture, entitled "Impressions of European Architecture To-day," was given by Professor Lionel B. Budden, of the University of Liverpool, who expressed considerable sympathy with the aspirations and efforts of those who endeavoured to make their work a reflex of the age in which they lived. During the past, said the lecturer, in periods of settled development, architecture had been a co-ordinating and unifying art, expressing directly the character of the civilisation of its time—providing a significant background to the life of the community, its progress marching with contemporary progress in the world of applied science; it had been an art conditioning the employment of the other visual arts, harmonising and stabilising them, and providing for them an assured setting.

In the latter half of the 18th century, there began to operate those forces—economic and cultural—which disintegrated sound tradition, producing, up to our own time, conflict, confusion, and that fatal division of activities which placed building and engineering in one category, and architecture in another. A wilderness of inexpressive ugliness was created, with a resultant atrophy of æsthetic sense in relation to environment. Architecture grew to be more of an affair of book knowledge, concerned with the external attributes of historical styles, although this charge could not be as completely sustained against the exponents of the classical architecture of the 19th century, or against their rivals of the mediæval school. This resulted in an extraordinary lack of relation between the architectural background of the 19th and 20th centuries and the life which moved against it. So that a real and significant unity might be achieved, the visible and external form of the work must arise logically from the complex body of needs that made up the architectural subject or programme; and the form must not be something superimposed upon those needs. The way to bring modern commercial buildings within the realm of serious architecture was not to try to make them look like something else, but to allow the spheres of building and engineering to be brought back again into the world of architecture.

A vote of thanks to the lecturer was proposed by Mr. D. S. Andrews, Principal of the Leeds College of Art, and seconded by Mr. Norman Culley.

TIMBER RESEARCH.

FOREST PRODUCTS' ANNUAL REPORT.

The annual report of the Forest Products Research Board for the year 1934, issued recently by the Department of Scientific and Industrial Research,* describes the work carried out at the Forest Products Research Laboratory, Princes Risborough, aiming at the better utilisation of timber, whether home-grown or imported.

The growing appreciation of the timber-using industries of the work of the laboratory is reflected in the large increase in the number of inquiries on timber problems dealt with during the year. These have risen from 903 in 1932 to 1,336 in 1933 and 1,739 in 1934. Over 70 per cent. of the inquiries came from brokers, timber merchants, architects, builders, etc., the remainder being from Government Departments, public services, educational and research institutions and private individuals. There was an increase of 45 per cent. in the inquiries relating to seasoning problems very largely from trade sources seeking advice and assistance in practical problems connected with kilns, drying, steam bending and the moisture relations of timber. Several inquiries related to the possibility of adopting the experimental steam bending machine at the laboratory for commercial purposes, and it would seem that only slight modification would be necessary to produce an effective industrial equipment.

Joinery Problems.

The "working" of over 50 species of timber, i.e., the shrinkage and swelling with varying atmospheric conditions which leads to sticking drawers and badly fitting windows and doors, has been studied. Specimens have been exposed in offices and bedrooms, and in the form of panels in new buildings, central-heated and air-conditioned buildings, to discover the degree of seasoning (i.e., drying) most suitable for timber to be used in various situations. As regards air-condition buildings, the report remarks that "as the temperature and humidity conditions are ostensibly maintained constant throughout the year, it would be expected that once the building had dried out the moisture content of the timber work would remain constant. This was not found to be the case, however, although the range of variation observed in the moisture content was only about plus or minus 1 per cent., or about half the change which takes place in an ordinary centrally heated building."

Death-Watch Beetles Bred in Captivity.

For the first time adult death-watch beetles have been bred in captivity from the egg. It is believed that this insect has never before been reared in any laboratory, nor has it been previously possible to determine the duration of its life cycle under the different control conditions of temperature and humidity. It was previously believed that the life cycle of the beetle under suitable conditions was not likely to be less than two years, but in willow in an advanced stage of fungal decay, having a moisture content of 18 to 20 per cent. and a temperature of 20 to 25 deg. C., the insect completed its development in the short period of 11 months. Experiments made lend valuable support to the view that the development of Xestobium in buildings is extremely slow, unless conditions unusually favourable for rapid decay of the timber are present.

Now that the insect can be reared in the laboratory, further work has been planned with the object of investigating the type and extent of fungal decay in timber in relation to the development of the insect. Moreover, with the increased possibility of rearing large numbers of insects, investigations of various methods of control now become more feasible.

The Report states: "In the course of the past year further instances of damage by the Death-watch beetle to structural timbers in old buildings have been recorded, and there seems to be a general impression in the minds of those responsible for the care and maintenance of buildings that this insect has within the last few years suddenly become widespread in its activity. The evidence collected by the Laboratory, both from inspections of buildings and from the results of experimental work on the life-history and habits of the insect, does not support this belief." The apparent spread of the beetle, it seems, can best be explained by the increased interest taken in its occurrence leading to inspections of old timbers through fear that the beetle might be present. All the available information tends to confirm the belief that this insect has long carried on its depredations in old buildings, and is now no more abundant, although more frequently detected, than in the past.

Other Insect Pests.

Although the death-watch beetle has attracted more public attention to himself, much greater commercial damage is caused by other species, as, for example, lyctus beetles. Many inquiries at the laboratory relating to damage by these insects are being received. "It is not surprising," the Report states, "that losses are still being caused by these beetles, since, with the exception of a few of the more progressive firms, organised and co-operative action in the adoption of simple control measures has not been undertaken by the trade as a whole. Architects, builders, etc., can avoid trouble from these insects by specifying in their contracts the use of timber guaranteed free from lyctus. Until such a step is taken by consumers, there is little real hope of materially reducing the losses caused."

Good progress has been made in studying the factors which determine the susceptibility of timbers to infestation by lyctus, as, for example, the relation between vessel diameter of a timber and its liability to attack and the substances in the timber which provide a source of food for the larvæ. A substance resembling starch has been isolated from oak sapwood which may be the chief source of food for the invading lyctus. Extraction of samples of the sapwood with water at boiling-point removes this starch and renders the wood totally unsuitable for larval development. Even extraction at 60 deg. C. removes a substance which is essential for larval development so that larvæ die very soon after hatching.

Dry Rot and Other Fungal Attack.

The first experiment with various types of solid floors has been completed in the experimental house in which various forms of building construction specially likely to favour ravages by dry rot or to resist the attacks are employed. It has been found that the only type of solid floor likely to be satisfactory is one that includes some effective damp-proof course between the concrete and the boards, and that probably this is best provided by a thick layer of poured bitumen directly under the boards. A number of tests upon the resistance to dry rot of various building materials such as wall boards and insulating materials have been carried out. The resistance to dry rot and other types of fungal decay of a further number of timbers, both home-grown and Colonial, has been examined. Amongst those that have given indications that they possess a high resistance to decay may be mentioned black cabbage bark from British Guiana, iroko, okan and mninga, all from West Africa. The durability of timber cut from logs of oak and beech stored under sea water is being compared with that of air-dried material.

Methods of preventing various forms of fungal staining of timber are being investigated and the relative liability of various types of paint to mould growth is being examined as a step towards finding a suitable toxic substance that can be added to the paint to prevent it. The effect of fungal decay on the strength of timber even before the presence of the fungus becomes obvious is also studied.

Wood-working Research.

A number of important researches are in progress into the wood-working qualities of home-grown and overseas timber in which experiments have been carried out to determine what modifications of shape, setting or speed of the tools, were required to obtain satisfactory working. "Timbers are now being introduced into this country," the Report states, "possessing peculiarities in grain arrangement or other feature requiring special treatment in machining or sawing, and more extended studies are necessary if the optimum conditions of working are to be determined in such cases. The technique for this must be based on knowledge of the principles underlying the working of timber—the influence of variables in the operations and of variations in the physical properties of a timber on its workability."

The optimum cutting angle to produce the best finish in planing has been determined for a number of timbers. Work has also been undertaken in connection with the sawing and machining of timbers containing silica and other abrasive substances. Experiments have shown the need for specially tough and hard teeth tips and a saw tipped with a tungsten carbide compound is now undergoing trials. Tests are to be made at a later date with special steel alloy saws, and, if necessary, the teeth of these will be heat treated to obtain additional hardness. The dulling of cutting edges in planing and other machining operations is another difficulty which is being investigated. A number of saw and cutter manufacturers have been approached on this subject, and they have offered to co-operate in the work.

* See Leading Article, page 905.

THE PRESERVATION OF MINE TIMBER

The third pamphlet in the new series of Forest Products Research Records, issued recently by the Department of Scientific and Industrial Research (H.M. Stationery Office, price 6d. net), describes experiments on the preservation of timber used in mines. Although timber to the value of about £6,000,000 is used every year in the mines of the United Kingdom, it is estimated that less than 2 per cent. receives any preservative treatment. Experiments were carried out at two pits, the Langton Pit, Pinxton, near Nottingham, and the Woolmet pit at Portobello, near Edinburgh. The more expensive preservatives, namely, creosote, Wolman salts, and sodium fluoride are, it is stated, giving the best results at both pits, whilst sodium chloride, even in strong concentrations, is having the least preservative effect. Even this treatment, however, at a conservative estimate, doubles the life of the timber. "It would appear," the report states, "that in the case of Wolman salts and sodium fluoride, a 2 per cent. solution is sufficiently concentrated, and that a stronger solution is not necessary. The use of a 2 per cent. solution would considerably reduce the cost of these treatments, which in the case of the more expensive preservative would amount to not more than 3½d. per cubic foot, or less than 3d. for a 6-ft. prop. Even at this stage the economy of preservative treatment is amply demonstrated, even if the life of the timber is only doubled, and it is certain that the effect of the better preservatives will be to lengthen it considerably more."

Memorial, L.C.C. Fire Brigade Headquarters.

The Fire Brigade and Main Drainage Committee of the L.C.C. have accepted an offer by the underwriters of Lloyd's to erect at their own expense in the main entrance vestibule of the new fire brigade headquarters on the Albert Embankment a memorial to members of the brigade who have lost their lives in the execution of their duty. The memorial will be retrospective to the year 1832, and will be of bronze relief. The work will be entrusted to Mr. Gilbert Bayes.

THE 1935 FORM OF BUILDING SUB-CONTRACT—VIII

By W. T. CRESWELL, K.C., Author of "The 1931 Form of Building Contract," etc.

Clause 6 continued.

By sub-clause (b) the contractor is not to pay the sub-contractor for the sub-contract works or any authorised variation thereof until the architect has actually certified both the payment itself and the fact that it is due from the employer to the contractor for the sub-contract works. This certificate is to be issued in strict accordance with the provisions of the principal contract.

The amount certified [less the appropriate proportion of retention money (as determined under clause 8 of the sub-contract) and cash discount of 2½ per cent.] is to be paid to the sub-contractor by the contractor within 14 days of the receipt by the contractor of the certificate of the architect.

This sub-clause emphasises that the sub-contractor has contractual relations with the contractor only; that is, that he has no privity of contract with the employer. So it is to the contractor that the sub-contractor must look for payment. This is in accordance with settled law, see Hampton *v.* Glamorgan C.C. (1916) 33 T.L.R., 58 H.L. Further, the contractor must pay to the sub-contractor any items of payment for sub-contract works which are included in any certificate of the architect issued in the name of the general contractor, within fourteen days of the receipt by the contractor of such certificate. It is also clear that such payments are equally due whether the contractor himself has received payment from the employer or not.

By clause 15 of the 1931 Form of Building Contract, specialists, merchants, tradesmen and others nominated and selected by the architect become "nominated sub-contractors," and no nominated sub-contractor can be employed upon or in connection with any of the works comprised in the building contract if the contractor makes reasonable objection against such an one, or (save when the architect and contractor shall otherwise expressly agree) one who refuses to enter into a sub-contract containing amongst other things the provision that payment less only a cash discount of 2½ per cent., should be made to the nominated sub-contractor by the contractor within 14 days of his receipt of any architect's certificate, which includes the value of such sub-contractor's work.

By clause 15 (b) of the 1931 Form of Contract, the architect, before issuing any further certificate, can call upon the contractor to give him reasonable proof that all nominated sub-contractors' accounts included in previous certificates have been duly discharged; failing which, the employer may, on a certificate of the architect, pay all outstanding accounts of sub-contractors direct, and deduct the amount so paid by him from any sums due to the contractor under the architect's certificate; but the employer, by making these direct payments, does not create any privity of contract between himself and any sub-contractor so paid. This, as has already been pointed out, is in accordance with settled law (see Hampton *v.* Glamorgan C.C. above).

Under clause 15 (c) of the 1931 Form the architect can secure final payment to a nominated sub-contractor for work done by him even before final payment is due to the contractor on the whole of the works, if and when the sub-contractor agrees to indemnify satisfactorily the contractor against any latent defects in the work thus paid for. Thus, the architect can include in any certificate issued to the general contractor an amount covering the final payment to the sub-contractor; and when the contractor has once paid over to the sub-contractor this final amount the contractor is thereby discharged from all liability for the sub-contract work or materials concerned, save only for the latent defects aforesaid. The amount certified and paid to the sub-contractor includes also any retention moneys due on the sub-contract works, but he is liable to the contractor for any latent defects which may appear in the work paid for, presumably until the end of the maintenance period under the principal contract.

In a memorandum issued by the Royal Institute of British Architects for the guidance of members in dealing with the 1931 Form of Contract it was stated that the intention of clause 15 is that only such merchants, tradesmen and other who supply *and* fix goods (and therefore have a right of access to the contract works) for which p.c. prices and provisional sums are included, are to be regarded as "nominated sub-contractors." Merchants who only *supply* goods, but do not fix them, and do not therefore come on to the contract works, are not sub-contractors but "suppliers."

Under clause 24 (a) of the 1931 Form, an assured cash discount of 5 per cent. is allowed under the contract to the contractor as from the supplier because (it is said) of the greater risk the contractor has to run in dealing with "suppliers," and that the 2½ per cent.—allowed in the case of "nominated sub-contractors"—would not provide against that extra risk. The memorandum referred to advocates that the architect should 'request the sub-contractors and/or suppliers to include the appropriate cash discounts" in their tenders. In every case, however, a contractor should himself make sure that these discounts are allowed in all prices tendered by sub-contractors and suppliers.

By sub-clause (c) of the 1935 sub-contract form, if the contractor under the principal contract makes application to the architect for certificates, he must, on every occasion that he makes such an application include in the amount he asks for a sum representing a fair value for work then done by the sub-contractor, also allowing for authorised variation; further, he must notify the sub-contractor on each occasion of his intention to apply to the architect for a certificate, so as to give opportunity to the sub-contractor to make to the architect such representation, regarding his own work and its value as he may desire.

If the 1931 Form of Building Contract is used for the principal contract, it is useful to look at clause 25 thereof, for it provides that the amount due shall not only be the total value of the work executed, and of the materials and goods fixed in the building, but that it shall also include the value of materials and goods which have been delivered on the site (which must, however, be adequately stored and protected against damage or loss) up to and including a date not more than seven days prior to the date of the certificate. And it is also provided that only such goods and materials as are of necessity, properly and not prematurely brought to the site, shall be thus included.

It is also to be appreciated that in the 1931 Form it is not left to the contractor to decide when he shall make application for interim certificates, but the obligation is laid on the architect of issuing certificates at fixed periods stated in the Appendix thereto. These periods the sub-contractor should note carefully so that he may forward at the stated times through the contractor, any representations he wishes to make.

By sub-clause (d) of the 1935 Sub-Contract Form, upon completion of the works under the principal contract, if the architect has failed to certify payment to the contractor of such sums as the sub-contractor is entitled to in respect of the sub-contract works, with authorised extras, etc., then the contractor may grant permission to the sub-contractor to demand that the matter go before an arbitrator, the claim being made in the name of the general contractor as under the principal contract; this, provided always that the sub-contractor shall first give a proper and satisfactory indemnity and security to the contractor in respect of the arbitration proceedings and as may arise out of the award.

As to what this indemnity and security should be is not indicated.

Non-payment by Contractor.

By sub-clause (e) failure on the part of the contractor to pay the sub-contractor in accordance with the terms of the sub-contract entitles the sub-contractor, after giving the contractor seven days' written notice, to cease all work under the sub-contract until payment is made.

The period during which the work is so stopped is to count as an extension of time for completion, and not as delay on the part of the sub-contractor.

PUBLIC WORKS CONGRESS

The Public Works, Roads and Transport Congress (1935) was held this week at the Agricultural Hall, Islington (from Monday, the 18th, to Friday, the 22nd), when a number of papers on a variety of subjects were read by specialists in their respective departments. We give below some extracts from a paper of special interest to our readers.

TOWN AND COUNTRY PLANNING IN RELATION TO TRANSPORT.

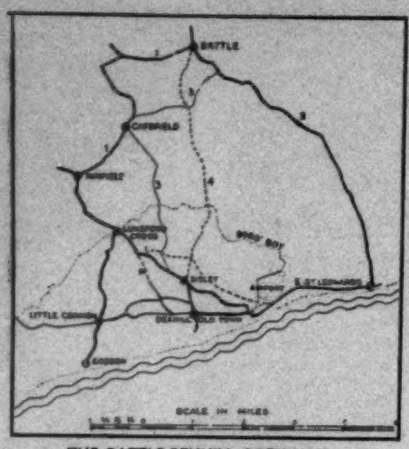
Dr. Thomas Adams, F.R.I.B.A., F.S.I., M.T.P.I., reading a paper on this subject, said that planning in England during the past thirty years had not only failed to deal adequately with the related problems of transport, roads and buildings, but had been too negative and restrictive in character. It had largely consisted of mere tinkering instead of gradual remoulding of towns. It sought to save the country from the town, transport from building development and building development from transport, by—now here and now there—restricting the one at the expense of the other. The Restriction of Ribbon Development Act, however useful, necessary and courageous it might be as a measure designed to ameliorate defective conditions, was frankly a restrictive measure, as was acknowledged in its title. Other well-known measures and practices were designed, on the contrary, to restrict traffic in the interests of building development and recreation.

Why had we to restrict building development and traffic movement, each in the alleged interest of the other, when the promotion of both was so essential to material prosperity? The answer was that for want of co-ordinated and positive planning we had not only failed to prevent bad development and traffic congestion, but allowed them to increase; while to restrict both we had to restrict all forms of development and interfere with all traffic movements in built areas.

Proper and positive planning of transport systems and building developments must be preceded by more elaborate and more scientific studies of our whole urban and rural structure than we seemed to have had the patience to undertake. We were prone to sit back and say that the problems in all their related aspects were too complex to comprehend in any planning policy; therefore we must plan in piecemeal and sporadic fashion. However, this meant that the term "planning," as we used it, was a misnomer; and that we did not really believe that comprehensive, co-ordinated and positive planning of transport and buildings together was practicable. Therefore we were content to go on awaiting defects to reveal themselves and then by processes of restriction attempt their relief.

Surely the issues at stake were too great to justify this attitude. Planning was in its very essence a reversion of the process of "muddling through." If we preferred this latter process, let us give up planning; but if we adopted the process of planning, let us base it on scientific study and apply intelligence and foresight to prevent evils that could never be cured by a policy of muddling, followed by restriction of the effects of muddling. More study and planning were specially needed in regard to the location of industries, the design of roads, and the development of a sound policy of expenditure on public works.

The location of modern industries and other economic activities which benefited from centralisation depended primarily on the attraction offered by facilities for transport in its



THE BATTLE-BEXHILL PARKWAY.

	Miles
1—Existing classified road between Battle and Bexhill Old Town via Ninfield and Sidley ...	9¾
2—Existing classified road between Battle and Bexhill Old Town via St. Leonards	10¾
3—Possible connection via Powdermill Lane and Watermill Lane (widened) and Sidley ...	7¼
4—Proposed new road between Battle and Bexhill Old Town via Sidley	5¾
Length of boundary of Bexhill between Roads Nos. 1 and 2 at points of entrance to Borough	5¾
Direct distance between points of entrance to Borough of Bexhill	3¼

different forms. Transport attracted industries; while industries attracted business, residence and auxiliary uses. The logical order of growth suggested the logical order of planning. Similarly economic considerations must come first in planning, as health and amenities were dependent in the first place on the resources available to meet their cost. Moreover, true economy was consistent with the maintenance of health and amenity.

No proper guidance was given in England in connection with the location of industry in relation to systems of transport. This guidance must be based on national studies and skeleton plans dealing with national phases of land utilisation and transport as a basis for country planning.

One of the most important questions in country and town planning was that of road design. We had now come to recognise that the mere planning of road systems and improvement of surfaces had to be co-ordinated with design of cross-sections, crossings, junctions and corners to a much greater extent than hitherto. The greatest benefit that would be conferred on counties by the Ribbon Development Bill would be its encouragement of comprehensive road design. Road systems would now have to be considered in relation to different standard widths, and those widths in relation not only to the requirements of vehicular traffic, but also to the separation of such traffic moving in different directions and the provision of space for cyclists and pedestrians. Moreover, the Act provided for the planning of means of access to principal roads and for the planning of building development on frontage land.

Every county should now prepare a plan of ribbons 440 ft. wide extending the full length of their classified roads. This plan would be essential to enable the county to determine applications for building within the 440 ft. It was obvious that building should not be restricted on all land abutting on highways and that the important thing was to know what and how development should be permitted. This involves planning for the purpose of indicating the parts of the 440-ft. ribbons which should or should not be built upon; and how to keep the cost of compensation within reasonable limits, to prevent undue interference with the free movement of traffic and to ensure the maximum safety of roads, without completely sterilising the land for reasonable development. Thus the Ribbon Development Act might indirectly be a great measure of constructive planning within limited areas *if* county councils would prepare constructive plans in good time.

While adequate space in roads and control of frontage development were desirable, both might be carried to wasteful extremes. Sufficient space should be obtained to separate opposing lines of traffic on major highways with 40-ft. grass strips between them. The principal cross streets should be carried over arterial roads on separate levels. In many instances where an existing road was too narrow, it should be limited to one-way traffic and a parallel road constructed, instead of widening the existing road.

More should be done to construct new parkways through undeveloped land—providing two one-way roads and ample reservation of open land on both sides, giving a minimum total width of 300 ft. to prevent frontage development and provide for cycling, riding and walking away from the highway. The lecturer then referred to a suggestion for a proposed parkway, providing for modern traffic conditions, between Bexhill and Battle, Sussex. A brief description of this project is given at the end of these extracts.

As a foundation for national development and for expanding any programme of public works, continued the lecturer, we should have a national plan of physical features quite distinct from any other plan or system of political reform. However, it would be folly to attempt the preparation of such a plan or, as a preliminary, to set up an organisation to prepare it, before we had made a national survey. Until a survey was made it was not practicable to decide what the character and contents of a national skeleton plan should be, and what division should be made between national, county and town or district planning. We could define the scope of a survey, but needed the survey to define the scope of any national plan.

The survey was necessary to obtain the full value of a vast amount of material relating to transport, industry, housing and land utilisation that already existed and required to be analysed, co-ordinated and supplemented. It should give us a perspective view of national conditions and of the changes and developments that needed to be controlled and co-ordinated, and should deal primarily with the following matters:—

(1) *Natural Conditions.*—Watersheds and river valleys and problems of water supply, protection of amenities, disposal of wastes and drainage of marshy lands.

(2) *Transport.*—Co-ordination of whole system of transport—harbours, railways, aerodromes and highways—in relation to natural conditions, production and distribution of power, ribbon development, and tendencies in industrial location.

(3) *Industries and Housing.*—Arrangement and distribution of factories and buildings used for other economic activities, and for residence, and their relation to natural conditions and transport.

Without the aid of a scientific study of these and kindred matters we should continue to have no clearly defined policy to guide the direction and order of promoting public works and the preparation of town and country planning schemes. With its aid we should be able to arrive at sound conclusions regarding the scope of a national plan, the organisation needed to prepare and give it effect, and the best methods of co-ordinating in a logical national framework our too haphazard, and therefore largely ineffective, system of town and country planning

Proposed Battle-Bexhill Parkway.

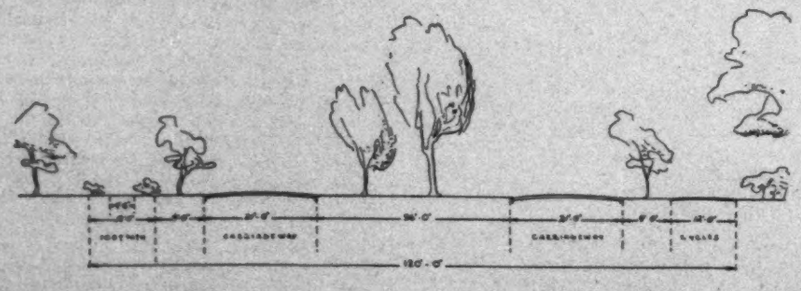
Following is the author's brief description of the project for a Parkway between Battle and Bexhill:—

The proposed parkway is distinguished from an ordinary road in that it would be bounded on both sides by public or private park strips with no means of access from abutting land except at controlled points. Parkways should be freeways, that is, they should comprise two one-way roads and have all road crossings on separate levels. They should also include cycle, bridle and footways. Ideal parkways are only practicable in comparatively rural areas between towns. They should be constructed where they are required to serve important traffic needs, are more economical to construct and maintain than existing highways and permit complete traffic control.

It will be observed from the road diagram of the approach roads to Bexhill that the proposed parkway between Battle and Bexhill is necessary to provide Bexhill with a direct approach. Its length is about four miles shorter than the existing route. The latter passes through four villages and has much ribbon development on its frontages which prevent its being widened at reasonable cost. Its awkward alignment and three right-angled turnings are shown on the diagram.

The reservation for the parkway is proposed to be 120 ft. wide, with open spaces of varied width outside the reservation. It will pass over one cross-road and under another, with a few controlled entrances at determined points. Bays would be provided for standing traffic. The parkway has been suggested for inclusion in the Bexhill Borough and Battle Rural District Council Town Planning Schemes. It is estimated to cost less than would require to be spent in reconstructing existing approach roads of adequate width (60 ft.), and restricting further ribbon development within 220 ft. of the middle of such roads.

In actual construction, the parkway may be varied in plan and cross-section. Its width may be wider or narrower in places to save cost or to fit the roads to the ground level. It is suggested that such a parkway should be constructed as a national object-lesson for the purpose of demonstrating the economy and safety of new parkways as compared with reconstructed highways.



CROSS-SECTION OF THE BATTLE-BEXHILL PARKWAY

Railway Freight Services.

The British Railways Press Office has issued, together with other literature relating to the services offered by British railways, a message from Mr. Geoffrey Marshall, Chairman, Goods Managers' Conference, in the course of which it is stated that hundreds of thousands of pounds have been and are being devoted to improvements at stations, sidings and docks, for the construction of more powerful locomotives and of special types of containers and rolling stock, in the mechanisation of cartage fleets, and in the further extension of express freight train services, with the object of assisting the recovery of trade and industry.

THE STANDARD METHOD OF MEASUREMENT

A SUMMARY OF ALTERATIONS.

A NUMBER of summaries of the various sections of the Standard Method of Measurement, prepared by the quantity surveyor members of the Joint Committee on Methods of Measurement (Messrs. A. G. Cross, R. H. Francis, Percival F. Gleed, E. C. Harris, the Rev. Sydney L. Porter, and Mr. Henry Vale), were read by their authors at a general meeting of the Quantity Surveyors' Section of the Chartered Surveyors' Institution on November 20. We commence in this issue a report of proceedings.

PRELIMINARIES.

(By REV. S. L. PORTER.)

It is well to mention here, at the beginning, that there were certain principles that the Joint Committee adopted in their revision which account for some new clauses and variations in the wording of others :—

(*a*) The elimination, wherever possible, of the alternative units of measurement given in previous editions.

(*b*) Adherence to the terms "nominated sub-contractors" and "artists or tradesmen engaged by the employer," used by the compilers of the 1931 Form of Contract, and the avoidance of the ambiguous term of "special tradesmen."

(*c*) The elimination, as far as possible, of all element of risk to the contractor in pricing by requiring the quantity surveyor to give what knowledge is possible for him to obtain.

The Joint Committee, while providing in *Clause* 2 (*a*) that if any Form of Contract and Conditions other than that now known as the "1931 Contract" be employed, the whole of its clauses shall be given in Schedule form, have visualised the general adoption of this 1931 Contract, and have framed the new preliminaries accordingly. This accounts for such *Clauses* as 4 (*a*), 5, 9, 16, 26 (*b*), etc.

What has been written above will explain some of the alterations made, and no further reference to them seems necessary; with regard to others, however, a few words may be advisable, and the order in which they appear in the new volume has been followed.

Clause 1 (*c*).—It has now been definitely laid down that all work, unless otherwise stated, shall be measured net as fixed in its place.

Clause 2 (*b*).—In the old volume it was laid down in some cases that the work at various levels should be given separately, as, for instance, concrete in floors, asphalt, steel, etc., but, in view of the greatly improved methods of hoisting, the contractor members of the Joint Committee considered that this separation was now necessary, provided that an adequate description of the works, as provided for in this clause, were given. This clause, therefore, has the effect of saving the quantity surveyor considerable time in abstracting and billing, and the contractor in pricing, and avoids the frequent mention of levels throughout his bills. In addition, many quantity surveyors have been in the habit for some years past of preparing their preliminary bills with such a general description, and it seemed to the Joint Committee that it was an admirable practice which it would be as well to make obligatory.

Clause 7 (*a*).—Special scaffolds required for nominated sub-contractors' work are now to follow the provisional sums for such work.

Clause 8.—All guesswork on the part of the contractor with regard to district surveyor's charges is now avoided by this clause.

Clause 11.—It will be noted that the question of the rebuilding of cable boxes, etc., under existing footways is now provided for, a matter that has been a frequent cause of dispute in recent years.

Clause 17.—The responsibility of the contractor in this clause has been amplified by the inclusion of "roads, whether public or private," but new *Clause* 35 (old *Clause* 37) now has no reference to them.

Clause 18 (*a*).—Fire insurance has been specifically stated as to be effected on materials brought to and deposited upon the site, and the fire policy has to cover architect's and surveyor's fees. Fire risk to existing buildings is excluded from a contract under the 1931 Form.

Clause 18 (*b*).—After consulting lawyers, the Joint Committee has amplified old *Clause* 18 to cover the risks given. The last paragraph of this clause concerning the position in the bills of quantities of these insurance clauses should be noted.

Clause 27.—A new clause relating to samples.

Clause 28.—It being often advisable to include the necessary shoring in cutting an opening with the item, this clause, as now worded, permits it. It also gives latitude with regard to general shoring, by the insertion of the words "where circumstances render it desirable."

Clause 30.—The casing-up clause (old *Clause* 28) has been much simplified, it being now laid down that a clause at the end of each trade, where work is included requiring same, is sufficient. The last part of this clause concerning the protection of floors and pavings should be noted.

Clause 31.—A stipulation is added with regard to position in the bills of the clause providing for water for the works.

Clause 32.—This clause considerably amplifies old *Clauses* 16 *and* 30, relating to attendances. It discriminates between attendance upon nominated sub-contractors and upon artists or tradesmen engaged by the employer, and should be carefully studied.

Clause 33.—This clause definitely directs that the works executed by public authorities must be made the subject of provisional sums.

The clause given as a note at the beginning of the "Excavator" in the old edition, referring to work executed in or under water, has been transferred to its new position so as to cover work in all trades so executed.

EXCAVATOR.

(By REV. S. L. PORTER.)

Clause 1 (*b*).—The contractor's attention has now to be drawn to the fact that, in pricing items relating to the disposal of excavated material he is to allow for increase in bulk after excavating.

Clause 1 (*c*).—This clause lays down that, except in certain cases enumerated, subsequent disposal of excavated material shall be given in separate items from the excavation itself.

Clause 1 (*f*).—Levelling and ramming bottoms of trench or surface excavation under foundations, beds, pavings, etc., may now be described with the item of excavation.

Clause 3 (*b*).—It should be noted that the 2-ft. working space stipulated previously for external damp-proof covering to basement walls has now to be allowed where the method of construction of the walls renders it necessary.

Clause 5 (*b*).—The formation of slopes to cuttings has now to be given separately from that to embankments.

Clause 6.—The method of measurement of isolated pier holes has been entirely changed, and should be noted.

Clause 7.—The last remark applies also to the measurement of underpinning. A description of the work to be underpinned has now to be given, followed by an item relating to supporting timbers. Widths are also laid down varying according to the depth of the trench.

Clause 8.—It is now laid down that where the quantity of breaking up of hard substances met with in excavation cannot be ascertained accurately, a provisional quantity shall be given. Clearing out and removing contents of old cesspools may now be described instead of measured.

Clause 11.—The old clause with regard to pumping has been amplified, and the word "water" has been limited to "storm and percolating water." The risk in the matter of springs or running water, formerly borne by the contractor, has been eliminated. Where it is known that these are likely to be encountered, provision is to be made in the bill of quantities as provided for in this new clause, and, by implication, if they are encountered unexpectedly the cost of dealing with them must be added to the contract figure under *Clause* 11 of the 1931 Contract.

Clause 12.—It will be noted that the term "planking and strutting" is now defined. There are also amplifications to the old *Clause* 11, the chief being that in planking and strutting to trenches the depth has to be stated in stages of 5 ft.; special shoring is also provided for, and the additional work where retaining walls are to be constructed in two thicknesses.

Clause 14.—This is a new clause laying down the method in which hardcore is to be measured.

CONCRETOR.

(By REV. S. L. PORTER.)

It will be seen that the clauses relating to reinforced concrete on pages 19 and 20 of the old volume are now incorporated with the Concretor, and a note has been inserted at the beginning to the effect that reinforced concrete, reinforcement and formwork (other than filler-joist construction) shall be grouped in a separate bill or section under the heading of "Reinforced Concrete."

It is also to be noted that work at various levels may now be billed together, and that no deductions are to be made for the volume of the reinforcement, and that the sectional areas given in *Clause* 1, paragraph 6, on page 19 of the old volume have been varied by *Clause* 1 (*e*).

Treatment of finished faces of concrete has been dealt with in *Clause* 1 (*c*).

A new *Clause* 3 lays down the method of measurement for small bases for fencing posts and the like; *Clause* 9 also lays down that small engine beds are to be enumerated.

There is a new *Clause* 7, relating to stanchion foundations, and *Clause* 8 amplifies previous directions with regard to holding down bolts, etc. Curbs formed *in situ* and over 54 in. sectional area are to be given in feet cube. Casings to beams, lintols and stanchions are also to be given in feet cube. In floors, etc., if the panel system of heating is adopted, the area of the heating panels is to be stated.

Clause 17 relating to steps and staircases *in situ* is a revision of old *Clause* 23, page 9, and should be noted. The clauses relating to reinforcement have been remodelled, the chief difference being that in fabric reinforcement the net area covered only shall be measured.

FORMWORK FOR CONCRETE.—Formwork for concrete has been moved from its former position in the Carpenter and the clauses remodelled. It is to be measured, the actual surface in contact with the concrete, and the units of measurement have been laid down more definitely. It should be noted that notchings and filleting not exceeding 2 in. wide to form splayed internal and external angles in concrete are to be included in the description together with strutting where the height does not exceed 13 ft. The classification given in *Clause* 27 is amplified.

PRE-CAST CONCRETE WORK.—*Clauses* 24 *to* 27 inclusive of the old volume have been entirely remodelled and appear as *Clauses* 30 *and* 31 in the new edition. The chief difference is that in *Clause* 30 (*c*) it is laid down that the reinforcement shall be included with each item.

PATENT FIRE-RESISTING FLOORS, ROOFS, ETC.—*Clauses* 32 *to* 42 inclusive are entirely new, the old volume not having dealt with patent fire-resisting floors, roofs, etc.

PILING.

(By MR. HENRY VALE.)

The methods of measuring piling have been amended and elaborated to meet the more

recent requirements and to bring the method into line with the Institution of Structural Engineers. Since the previous edition of the Standard Method was issued, concrete piles are much more commonly used than wood piles, while an attempt has been made to describe the positions of the actual work and to give any additional information which may affect its value. Instead of occupying a quarter of a page the information is extended to a page and a half, and deals generally with wood piles, concrete piles and steel-sheet piling. There are so many special systems of piling that it is impossible to enumerate all these, but the principles laid down in the new edition should apply.

Time will prove whether this portion of the work will meet the requirements of piling in the future. It certainly can claim to be a better guide to the surveyor dealing with items of this nature.

BRICKLAYER.

(By Mr. E. C. Harris.)

In this important trade the radical alterations were surprisingly few, and most of the changes are in the nature of alterations in the general order of clauses and in phrasing. Dealing with the revisions in the order in which they occur, attention should be drawn to *Clause* 1 (*b*). The instruction that "the general height to which the brickwork rises shall be stated" involves the removal of the old *Clause* 37, which provided that brickwork above given heights should be kept separate. This change follows the principle that under modern conditions and with the improved elevating machinery the hoisting is of far less importance than formerly, and it is laid down in the Preliminaries that a full description of the building shall be given whereby the contractor may form a clear perspective of his job and adjust his prices accordingly.

Clause 2 clarifies the rule for deductions of horizontal members such as lintols. If these exceed 3 in. in depth, deduction is to be made for the whole length and an item given for cutting and pinning the ends. (See *Clause* 42 (*a*).)

In *Clause* 4 an alternative method is permitted for the measurement of brickwork in backing to masonry.

Clause 6 involves an important change in that it is no longer necessary to give separately brickwork raised off girders or old walls, but the necessary scaffolding for this operation shall be given and applies logically only to those cases where there is no brickwork immediately below the girders, and in no case does it apply to steel-framed buildings. The reason for this change is that with the increasing use of steel much of the brickwork in a modern building commences off steel at one level or another, and the information now suggested will give the contractor all that he really requires.

Clause 7.—It is noticeable that the alternative method of measuring brickwork in hollow walls is discontinued.

Clause 15 provides for the measurement of grooved bricks so commonly specified where Flettons are used.

Clause 21 (damp-proof courses) introduces a small change in respect of those 4½ in. wide. These will now be given in feet run.

Clause 23 is a new one. The measurement of plumbing to vertical angles was suggested from several quarters, and after much discussion the Committee felt that there was a good case for its measurement in the "Standard Method." The practice has been common in the north, and it will be interesting to observe the price per foot run which different estimators will place against this item, and by what fraction the price per rod of brickwork will be reduced in consequence. Naturally the item will only appear as a separate one in the case of main quoins, as wherever narrow returns or reveals are measured, the item will include the plumbing to angle as referred to in *Clause* 44 (*f*).

Clause 31 introduces a small departure from London practice in that the wedging to lead flashings being a plumber's item will now appear in the *Plumber*. (See "Plumber," 1 (*f*) (3).)

Clause 33 alters the method of bedding and pointing wood frames from the old enumeration to measurement in feet run.

Clause 36 may require a little explanation as a difference has been made between relieving arches and discharging arches, relieving arches being considered as those with a lintol under, the void being filled in, whereas discharging arches are rough arches forming openings without the employment of lintels.

Much discussion has been given to *Clause* 39, and more precise information is called for in relation to stoves and their setting. This is frequently a costly item, and many bills of quantities have in the past given no indication to the estimator of the operations involved.

Clause 42 will require careful studying, especially with regard to the provision for cutting and pinning ends of steel joists. These are no longer to be described as "large" over any given size, but will be billed in stages, which appears logical and not too cumbersome. A small change occurs in relation to holes for pipes.

The measurement of slab and block partitions is provided for in *Clause* 43.

The old *Clause* 59 (brick paving) disappears owing to the introduction of the new trade—"Pavior."

Facings, etc.—Whilst every effort has been made to avoid alternative units of measurement, the Committee failed to achieve this desirable object in regard to the measurement of facings, as it was felt that the time had hardly arrived when surveyors in those parts of the country so accustomed to the yard superficial would willingly agree to the southern unit of feet superficial.

Clause 44 (*f*) defines the width of a reveal which shall warrant it being measured in feet run, but, apart from an alteration in grouping the items, there are few changes in the measurement of facings which call for comment.

Clause 47 (*a*) lays down a definite rule for the measurement of fair cutting on facings wherever such work is interrupted by dressings or panels.

Clause 64 (glazed-brick facings) provides that an item of cutting and waste at internal angle shall be measured in feet run in lieu of the previous method of taking a superficial item to cover this labour and waste.

It is a tribute to those responsible for framing the earlier edition that so few important changes have appeared desirable.

Many of the suggested amendments related to the measurement of arches in faced work, some asking that they should be enumerated, others that they should be measured per foot lineal, but the Committee felt that the estimator is better served by adhering to the well-tried method of measurement by foot superficial, not on face and soffit.

(To be continued.)

INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

We do not undertake to reply to inquiries concerning proprietary materials.—Ed.

QUESTION

Concrete Churches.

Sir,—The writer would be glad to know of examples of small churches, which have cost between £1,000 to £5,000, in which the construction is mostly of concrete.

A. G. B.

ANSWERS.

Lagging a Hot-water Tank.

[Answer to "R. J. L.," November 8.]

Sir,—It is important that all parts of a hot-water system be lagged excepting the radiators and similar appliances. Leaving places unlagged means a considerable heat loss. Although this occurs at all times, it is most noticeable when the boiler is under banked fires. There are a large number of lagging materials on the market to meet both high and lower temperature conditions. Any firm of heating engineers would supply suitable lagging together with particulars for mixing and fixing same if given particulars of the purpose for which required and the maximum temperature to be resisted.

W. E. W.

Damp Wall: Cure Wanted.

[Answer to "D. M. C.," October 25.]

Sir,—Provided there is an efficient damp-course, damp walls may be caused by penetration of damp from the outside or condensation on the inside. All brickwork is porous to a certain extent, but if the material used and the workmanship are good this should only be slight. Porosity, however, is always possible, which results in dampness after heavy rains. If moisture can penetrate into the wall, the temperature of the wall will drop and the inner surface of the wall will be at a much lower temperature than the room atmosphere. If the atmosphere is at all humid, condensation will take place owing to the temperature difference. It is not necessary for the moisture to soak through to the inner surface. If certain parts of the wall only are porous the damp will be in patches only, and as the damp may travel vertically or horizontally in the wall, the dampness may appear in parts not opposite where the moisture enters. The moisture may enter through a crack, and a small point of entry is sufficient to cause a large damp patch. Great care must be taken that all places are well pointed up. Defective guttering, which permits rain to run down the wall, is a frequent cause of dampness. Moisture frequently enters at the joints between woodwork and brickwork, and as wood shrinks breaks in the original joints are not uncommon. It is not uncommon for pointing to break away, owing to the action of the elements.

W. E. W.

Insulating a Partition Wall.

[Answer to "Busgrove," November 1.]

A communication from Messrs. Fredk. Jones and Co., Ltd., has been forwarded to our correspondent.—Ed.

Minimum Angle for Tiling.

[Answer to "White Knight," November 8.]

Sir,—"White Knight" asks for the minimum angle at which sand-faced roof tiling should be laid in an exposed position to ensure a watertight roof. In my experience, provided a very soundly manufactured sand-faced tile is alone used, a roof in the County of Sussex can with safety have a pitch of 35 deg. The roof timbers, however, must be of well-seasoned wood, to prevent shrinkage and undue sagging.

C. A. Longley.

[*** Our correspondent gives the name and address of manufacturers of sand-faced tiles, which we have forwarded to "White Knight."—Ed.]

Unlicensed Temporary Building: Liability of Re-erector.

[Answers to "Plans," November 15.]

Sir,—First, a verbal order such as is described is a contract which can be enforced. It is quite clear that it is the person who erects or sets up a temporary building who is liable to the local authority. (See Section 27 of The Public Health Acts Amendment Act, 1907.)

Lex.

Sir,—The position is now quite clear from your correspondent's further statement, and there is no doubt that the owner is liable for any infringement of the by-laws with respect to building lines. The builder is engaged to build and not to advise.

Architect.

National Association of Water Users.

The annual report of the National Association of Water Users, Ltd., of which we have received a copy, gives under various heads particulars of the Association's activities on behalf of water users during the past year.

THE BUILDING TRADE

BUILDING BY-LAWS—XXI.

By B. PRICE DAVIES, F.S.I., M.T.P.I.
(Author of "Estimating for Buildings and Public Works.")

EARTH-CLOSETS AND PRIVIES.

In rural areas W.C.s are not always possible, and earth-closets or privies have to be resorted to. As this system means the storage of filth to some extent, greater precautions are necessary than is the case with W.C.s. (See Figs. 100 and 101.)

With respect to Earth-closets and Privies in connection with Buildings.

Earth-closet or Privy.

48/52. *Every person who shall construct an earth-closet or a privy in connection with a building shall comply with such of the following rules as are applicable:—*

Earth-closet or Privy to be Outside Building.

(1) *The earth-closet or privy shall be constructed*

(*a*) *so that it cannot be entered except from the external air;*

Distance from Well, Spring, etc.

(*b*) *at least forty feet from any well, spring or stream of water, used or likely to be used by man for drinking or domestic purposes, or for manufacturing drinks for the use of man, and otherwise in such a position as not to render any such water liable to pollution.*

(1) (a) An earth-closet or privy is not to be entered except from outside.

(*b*) It is also to be sufficiently far from any water used for drinking purposes. The forty-feet distance is not to be considered sufficient if it is liable to cause pollution of such water at that point.

Light and Ventilation.

48/52. (2) *There shall be provided a sufficient opening for lighting and ventilation as near to the top as practicable and communicating directly with the external air.*

(2) The wording is very much the same as that for the W.C. entered from outside. (See notes on Clause 47/51 (2).)

Receptacle of adequate capacity.

48/52. (3) *The earth-closet shall be provided with*

(*a*) *a suitable vessel of adequate capacity, for dry earth or other deodorising substance, so constructed and placed as to admit of ready access for depositing therein the necessary supply of dry earth or other deodorising substance;*

Earth-closet or Privy to have means for application of Earth, etc.

(*b*) *sufficient means for applying dry earth or other deodorising substance to any filth in the receptacle for filth.*

A receptacle is required by this paragraph, but this is for holding the deodorising substance. An earth-closet in its original sense refers to a building in which a hole or trench is dug in the earth and in which the filth is deposited. When such deposition takes place, it is to be immediately covered with earth, ashes, or other deodorising substances. A receptacle for such substances is therefore necessary, and this, if a removable receptacle, is usually a bucket, but in some cases an automatic appliance is arranged so that the earth is applied by means of pulling a handle or raising the seat. (See (8) and (9) of this clause dealing with receptacles.)

For a building in which the filth is deposited in a removable receptacle, two receptacles are required, for the deodorising substance is to be used in the manner described above. This accounts for the following paragraph :—

48/52. (4) *The earth-closet or privy and the receptacle for filth shall be constructed and placed as to allow the frequent and effectual application of a sufficient quantity of dry earth, or other deodorising substance, or of dust, ashes, or other dry refuse, to any filth in the receptacle.*

The receptacle for filth is next described.

Contents to be kept dry.

48/52. (5) *The receptacle for filth shall be*

(*a*) *so constructed and placed that its contents may not at any time be exposed to any rainfall or to the drainage of any waste water or liquid refuse, or escape, by leakage or otherwise, from the receptacle;*

(*b*) *constructed of such materials as to prevent the absorption by the receptacle of any filth deposited therein.*

It is not stated here whether the receptacle is movable or not. If not movable, as in the case of an earth-closet, the earth walls would have to be lined with non-absorbent material.

Extraneous moisture or any form of drain is not to percolate or flow into the receptacle, and *vice versa*, no moisture must percolate or flow from the receptacle.

Floor Level, etc., of Receptacle for Filth.

48/52. (6) *The floor shall be of non-absorbent material and shall in every part, excluding the part under or forming the bottom of the receptacle for filth, be at least three inches above the surface of the adjoining ground and have a fall or inclination towards the entrance door of at least half an inch to the foot.*

(6) This aids the prevention of water flowing into the building from outside. The floor is to be at least three inches above the ground outside, and it is to fall outwards to the entrance doorway. (See Fig. 100.)

Earth-closet or Privy not to connect to Drain.

48/52. (7) *No part of the earth-closet or privy or of any receptacle therein shall communicate with any drain.*

(7) Not only is a drain not to flow into the convenience, but no drain is allowed to flow from it. This hastens periodical cleansing.

(8) We now meet the possibility of a movable receptacle for filth.

Movable Receptacle.

(8) *If the earth-closet or privy is for use with a movable receptacle for filth*

(*a*) *the whole of the containing walls of the space beneath the seat, except such opening as may be necessary for affording access to the space, shall be constructed so as to be impervious to moisture;*

Level of Floor Space.

(*b*) *the floor of the space beneath the seat shall be at least three inches above the surface of the adjoining ground;*

Capacity of Receptacle, etc.

(*c*) *the seat, the aperture in the seat, and the space beneath the seat shall be of such dimensions that a movable receptacle for filth of a capacity not exceeding two cubic*

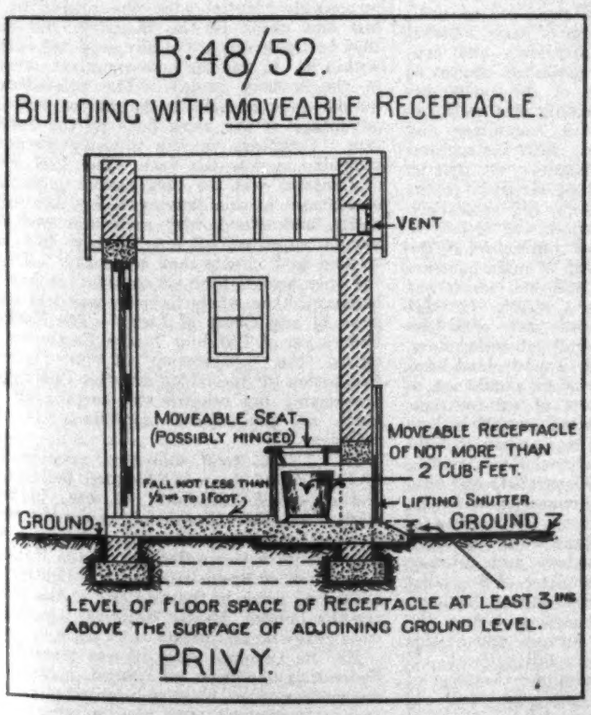

B·48/52.
BUILDING WITH MOVEABLE RECEPTACLE.
VENT
MOVEABLE SEAT (POSSIBLY HINGED)
MOVEABLE RECEPTACLE OF NOT MORE THAN 2 CUB·FEET.
FALL NOT LESS THAN ½ INS TO 1 FOOT.
LIFTING SHUTTER
GROUND
GROUND
LEVEL OF FLOOR SPACE OF RECEPTACLE AT LEAST 3 INS ABOVE THE SURFACE OF ADJOINING GROUND LEVEL.
PRIVY.

FIG. 100.

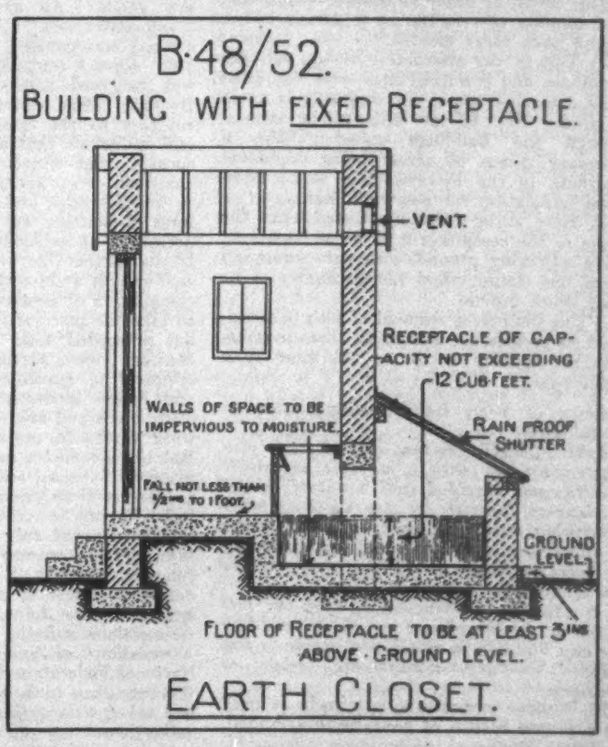

B·48/52.
BUILDING WITH FIXED RECEPTACLE.
VENT.
RECEPTACLE OF CAPACITY NOT EXCEEDING 12 CUB·FEET.
WALLS OF SPACE TO BE IMPERVIOUS TO MOISTURE.
RAIN PROOF SHUTTER
FALL NOT LESS THAN ½ INS TO 1 FOOT.
GROUND LEVEL
FLOOR OF RECEPTACLE TO BE AT LEAST 3 INS ABOVE GROUND LEVEL.
EARTH CLOSET.

FIG. 101.

feet (or such less capacity as may be sufficient to contain all filth, earth or other substance which may accumulate therein during a period of not more than one week) can be so placed and fitted beneath the seat as to prevent the deposit of any filth elsewhere than in such receptacle;

Access.

(d) adequate access for cleansing the space beneath the seat and for removing therefrom, or placing and fitting therein, the appropriate receptacle for filth shall be provided by an adjustment of, or the removal of, the seat or by some other suitable means.

(a) The walls around the movable receptacle, except the doorway which allows its removal, are to be impervious to moisture. This renders the space the more easily cleansable.

(b) This gives the floor level underneath the receptacle, which is to be three inches above the ground outside.

(c) The periodical removal of filth is expected in periods of not more than one week. A maximum capacity of two cubic feet is now stipulated for the movable receptacle. This must be of a shape to suit the conditions of use.

(d) Access is usually provided by means of a door to the external wall and opposite the movable receptacle. The seat is also advantageously movable, and this facilitates the cleansing operations.

Fixed Receptacle.

48/52. (9) *If the earth-closet or privy is for use with a fixed receptacle for filth*

Access.

(a) it shall be so constructed and situated that there shall be adequate access for cleansing the receptacle and for removing its contents without carrying them through any dwelling-house or public building or any building in which any person is employed in any manufacture, trade, or business;

Level of Floor Space.

(b) the bottom of the receptacle shall be at least three inches above the surface of the adjoining ground;

Capacity of Receptacle.

(c) the capacity of the receptacle shall not exceed twelve cubic feet, or such less capacity as may be sufficient to contain all filth, earth, or other substance, which may accumulate therein during a period of not more than three months.

(9) This is the alternative to the movable receptacle, and is a fixed one. (See Fig. 101.)

(a) Adequate access for cleansing is again required. Nor is the filth to be carried through the buildings stated. With a secondary means of access being stipulated elsewhere in the by-laws, this is no additional stipulation for new buildings.

(b) Here it is definitely stated that the *bottom* of the receptacle is to be at least 3 in. above adjoining ground, although paragraph (6) of this clause infers the possibility of its being below ground.

(c) The periodical removal of filth is anticipated in periods not exceeding three months, and the capacity is to be not more than 12 cubic feet.

Distance of Privy from Dwelling-house or Building.

48/52. (10) *Unless the earth-closet is constructed for use with a movable receptacle for filth, and provided with a suitable vessel of adequate capacity for dry earth or other deodorising substance, and sufficient means for the frequent and effectual application of dry earth or other deodorising substance to any filth in the receptacle*

it shall be constructed at least ten feet from a dwelling-house or public building or any building in which any person is employed in any manufacture, trade or business.

(10) Unless a movable receptacle is used and a proper system of deodorising arranged, then the isolation of the building is required. This is to be at least 10 ft. from the buildings stated.

(To be continued.)

NATIONAL FEDERATION OF SPECIALISTS AND SUB-CONTRACTORS

FIRST ANNUAL DINNER.

MEMBERS of the National Federation of Specialists and Sub-Contractors assembled with their guests last Monday evening for their first annual dinner, at the Park Lane Hotel, Piccadilly, W.1. Mr. T. A. McIntyre (President) was in the chair.

The toast of the evening was proposed by Mr. Sydney Tatchell, F.R.I.B.A., President of the Building Industries National Council, who said they celebrated that night what in fact was the birth of a new organisation. They would recall the publication, in 1931, of the main form of Building Contract, which was the direct result of co-operation between the parties concerned. Then, for the first time in the history of building, in those negotiations the sub-contracting interests met the builders, and established friendly relations which had now resulted in a Form of Sub-Contract. Whether we liked it or not, the conditions of building to-day had, owing to developments in the scientific side of building and other causes, made the specialist and sub-contractor important factors in any building undertaking, and it was a logical outcome of this state of affairs that the National Federation of Specialists and Sub-Contractors had been created. He was convinced that this new form of Sub-Contract, coupled with this new organisation, would make for closer and better relations between those engaged in building operations, and would strengthen and support the team work which was so vital to the success of any job, large or small. It was impossible to conclude without referring to those men of good will who had done so much to bring about that happy state of affairs, and the name that rose uppermost to his mind was that of Mr. McIntyre, their President, whose personality and disinterested work had, from the earliest days, done so much towards paving the way to those improved relations and better understandings.

The President, in responding to the toast, said it would be proper to explain how the Federation had come into being. In 1909 there had been issued by the R.I.B.A. a form of main contract in which was a clause referring to specialists, merchants, tradesmen, and others executing any work or supplying any goods. All such people were called "sub-contractors." They were, at the time, entirely unorganised, and remained so until 1928, when a common form of main contract was proposed between architects and contractors. That contract contained clauses so contrary to the interests of sub-contractors and specialists that a meeting was called to consider the situation. A committee and chairman were appointed, with instructions to watch events, and, if possible, see that no form of contract was agreed seriously to the detriment of sub-contractors and specialists. In due course that committee was invited to confer with architects and contractors in the compilation of another form of main contract to take the place of the 1928 one, which was not proceeded with. As a result, the 1931 contract was agreed and met with the approval of specialists and sub-contractors, and before separating it was decided that contractors and sub-contractors should set to work forthwith on a form of sub-contract. But the committee appointed in 1928 had no mandate for that, and it was agreed to form a properly constituted National Federation to look after the interests of specialists and sub-contractors, not only in connection with the form of sub-contract but in all matters of common interest. Excellent work had been done on behalf of specialists and sub-contractors by the Joint Committee of Specialist Associations and the Federation of National Associations of Sub-Contractors before the National Federation was formed, and at this juncture they both gave it full support. It had taken a long time to agree, the form of sub-contract requiring a good deal of patience, persistence and good temper, but at long last the form had been settled, and it was to be hoped it had a long and useful life in front of it. One of the tasks ahead of the building industry was to induce Government Departments and other public authorities to adopt those standards as far as practicable: at present the forms of contract such bodies issued were the "pet babies" of town clerks. In the half-yearly report of the London Master Builders' Association, last July, he had rejoiced to read that no fewer than thirty-one municipal public authorities of Greater London had agreed to adopt the 1931 standard form.

The health of the guests was proposed by Mr. J. L. Musgrave (treasurer).

The toast, having been duly honoured, was responded to by Mr. A. N. C. Shelley, M.A. (Ministry of Health), Mr. Stanley Hamp, V.P.R.I.B.A., Mr. Percival F. Gleed, F.S.I. (Chartered Surveyors' Institution), Mr. Walter Bosworth, P.N.F.B.T.E., Mr. J. H. Rooff, J.P., P.L.M.B.A., and Mr. R. Coppock, representing the operatives.

Mr. Shelley said if the big contracting authorities, the paymasters, were coming together on uniform lines of conduct, it was only reasonable that sub-contractors should come together also. He did not consider this a matter of opposition between the various parties to a contract: taking a long view there was unity of interest on both sides; and he hoped that in the future, whatever elements of opposition there had existed in the past, would vanish. He hoped to see a time when employer, contractor, professional man, and operative, would come together and realise that in entering into a contract for public works they were combining to perform a service to the community.

Mr. Stanley Hamp said that as an architect he welcomed greatly the unity that the Federation sought for. Unless there was a feeling of contact between the various parts of the building industry, unless its members understood one another, they would never obtain the good organisation that was essential.

Mr. Percival F. Gleed congratulated the Federation and the professional side of the industry also on the fact that a fair contract had been arrived at for the sub-contractors, and that it "lined up" with the main contract.

Mr. Walter Bosworth said the National Federation of Building Trades Employers was responsible jointly with the operatives for law and order in the industry, and since 1924 no single dispute of any kind had existed within it. It was the best organised industry in the country to-day. The non-federated builder gave no help in the matter, but took advantage of the work done by the Federation. Combines in the industry were impossible: it was too vast. The 1931 Form of Contract was the only agreed joint form of contract in this country to-day. One could easily understand why architects and surveyors approved of it: if they had any trouble with clients they could say, "This is the only agreed form of contract; it has the backing of the whole industry and will stand good in any Court of Law." The National Federation of Building Trades Employers required the co-operation of the National Federation of Specialists and Sub-Contractors in carrying out reforms and keeping up the level of professional conditions in the industry.

Mr. J. H. Rooff said that mention had been made of the non-Federated builders. If the organised members of the industry worked together they would make the unorganised builders come along and take a fair share in its better ordering. If the National Federation of Specialists and Sub-Contractors wished to work in the interests of the industry the London Master Builders' Association were ready to co-operate with them.

Mr. R. Coppock said he was pleased the Federation had been established, because the dissociation of the sub-contractors had been a nightmare with the building trade operative, who had never been able to get to grips with them.

THE BUILDING RESEARCH STATION

THE following abstracts of inquiries* represent a number of those recently submitted to the Building Research Station. The information given in the replies quoted is based on available knowledge. It has to be borne in mind that further scientific investigations may in the course of time indicate directions in which the replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each inquiry, and are not necessarily suitable for general application to all similar problems.

Sunshine and Windows.

An inquiry was received for details of the maximum number of hours during which sunshine could reach windows facing due south under the following conditions: (1) Assuming an entirely clear view; (2) assuming a blank wall erected at distances of 35 ft., 40, 45 and 50 ft. from the window, and rising 10, 20, 30, 40 and 50 ft. above the top of the window.

It was desired, further, to know the relation between the actual and maximum possible hours of sunshine throughout the year. It was to be assumed that the top of the window was 10 ft. above ground level.

REPLY.—Assuming that the obstructing wall is of infinite length, the following table gives the maximum possible hours of sunshine at the window head on the four days specified, and throughout the year, for the various heights and positions of the wall.

Distance of wall from window. ft.	Height of wall above window head. ft.	Maximum possible hours of sunshine.				
		Jan. 1.	April 1.	July 1.	Oct. 1.	throughout year.
35	10	—	11.7	9.4	11.2	2,930
	20	—	11.7	9.4	10.0	2,240
	30	—	8.4	9.4	—	1,840
	40	—	1.5	9.4	—	1,460
	50	—	0.9	9.4	—	1,160
40	10	2.4	11.7	9.4	11.3	3,040
	20	—	11.7	9.4	10.5	2,370
	30	—	11.7	9.4	—	1,970
	40	—	2.5	9.4	—	1,640
	50	—	1.2	9.4	—	1,360
45	10	3.7	11.7	9.4	11.3	3,140
	20	—	11.7	9.4	10.8	2,490
	30	—	11.7	9.4	8.0	2,100
	40	—	5.2	9.4	—	1,770
	50	—	1.7	9.4	—	1,500
50	10	4.4	11.7	9.4	11.3	3,210
	20	—	11.7	9.4	11.0	2,600
	30	—	11.7	9.4	9.7	2,190
	40	—	11.7	9.4	—	1,920
	50	—	2.5	9.4	—	1,640
Infinite (clear view)		7.7	11.7	9.4	11.7	3,590

Regarding the further query as to the relation between the actual and maximum possible hours of sunshine, the following figures for Westminster have been extracted from the "Book of Normals." The figures are based on observations with the Campbell-Stokes instrument, and do not include weak sunshine. They are averages over a 35-year period.

Period of averaging.	Length of day. (hr.)	Bright sunshine. (hr.)	Per-centage.
January	8.33	0.68	8
February	9.88	1.35	14
March	11.80	2.39	20
April	13.79	4.30	31
May	15.53	5.61	36
June	16.48	5.80	35
July	16.06	5.84	36
August	14.54	5.48	38
September ...	12.63	4.23	33
October	10.66	2.26	21
November... ...	8.86	1.00	11
December ...	7.85	0.52	7
Year	12.21	3.30	27

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It may be added that the figures given in the first table were obtained with the aid of the Heliodon, an instrument devised to enable the amount of sunshine which enters a room at any period of the year to be determined. The apparatus is described in the Annual Report of the Building Research Board for 1931, and is now available commercially.

Failure of Plastered Ceiling.

A firm of builders' merchants reported the failure of a ceiling plastered in a "coal ash mortar." It was stated that the mortar which they had supplied had been mixed according to their usual specification. The builder had complained that whilst the ceiling in question had not actually collapsed, in some parts the keys had cracked and the ceiling was loose. A sample of the mortar in the form of keys taken from the ceiling was submitted. The inquirer wished to know (*a*) whether there was any justification for the builder's statement; (*b*) if the mortar could be considered defective; (*c*) the best method of overcoming any defects in the mortar.

The following replies and comments on the three questions were given :—

(1) It would not be possible to judge whether the builder was justified in complaining that in some parts the key had cracked away and the ceiling was loose, without examining the ceiling in question.

(2) The specimen of mortar, in the form of keys from the ceiling plastering, was certainly somewhat friable, but not more so than might be expected from a comparatively freshly made non-hydraulic lime mortar. It is concluded from the large number of similar failures reported to this Station that an ungauged lime plaster on ceiling lathing is not a reliable material for modern conditions in building. An ungauged non-hydraulic lime plaster can only harden slowly by carbonation, and then only when absorption of atmospheric carbon dioxide can occur easily.

Whilst it is appreciated that ash mortar is widely used in certain parts of the country, there must always be some risk in the use of ashes owing to their inherently variable quality. It is generally accepted that the value of ashes, etc., in lime mortar lies in the fact that certain constituents of the ashes may exhibit pozzolanic properties, *i.e.*, have the property of combining chemically with the lime to form a cementing material, but should these properties be absent, the ashes would behave as an inert material in the same way as sand. Then, however, owing to the natural characteristics of the ashes they cannot be considered as satisfactory as sand. There is also the further possibility that if unburnt coal is present, the mortar will exhibit unsoundness due to the slow expansion of the unburnt material on exposure to air.

It may be added that moist conditions are necessary for the development of any pozzolanic properties, and in indoor work the comparatively rapid drying out, which would occur particularly during warm weather, would not be favourable. The above observations are not intended in any way to detract from the usefulness of ashes in mortar, but they must be borne in mind if successful results are to be obtained.

(3) With regard to the third query, it is now a common practice to gauge a non-hydraulic lime with Portland cement, not only in ceiling work, but in mortar for brickwork. A definite hydraulic set will be obtained, and the final strength of the mortar will be much greater than that of an ungauged lime.

However, the effects of any unsoundness in the ashes will then be accentuated, and if this procedure be adopted particular care must be taken to ensure soundness, and further, the mix must not be retempered and should be used within 2-3 hours of adding the cement.

A simple test to determine the soundness or otherwise of such substances is to be found in Building Research Bulletin No. 5, "The Properties of Breeze and Clinker Aggregates and Methods of Testing their Soundness." A copy of this may be obtained from H.M. Stationery Office, price 6d. net.

Concrete Bricks.

An architect required information regarding the suitability of concrete bricks for general use in buildings.

REPLY.—It appears that the application of concrete to the manufacture of bricks is a natural outcome of the extending use of cement products in the building industry. During the past year many inquiries have been received regarding the suitability of such bricks for general building purposes.

Provided the strength and resistance to water-penetration are adequate, the most important properties to be considered are the drying shrinkage and moisture movement. When a concrete product dries after casting, it tends to shrink, and if the bricks were built into a wall before this shrinkage had taken place there would be a tendency for the wall to crack. It is therefore essential that the bricks shall not be used until they have dried and completed the greater part of the shrinkage, and the responsibility should rest with the manufacturer to ensure that the bricks have been stored under cover for a period sufficient for that purpose. It may be noted that the British Standard Specification for Pre-cast Concrete slabs requires a period of storage of four weeks before delivery and sets limits for the shrinkage of the blocks. This indicates the kind of period that may be required with concrete bricks.

It must be borne in mind, however, that the moisture movement of concrete bricks will always be greater than that of well-burnt clay bricks, but provided they are carefully matured in the first instance, serious cracking is not to be expected. The type of mortar used would have an important bearing on the liability of a wall to cracking, and a gauged lime mortar is to be preferred to a strong cement mortar.

Efflorescence due to soluble salts is not likely to occur to any appreciable extent in concrete bricks provided the sand used were free from salts. The crushing strength and permeability of the bricks will vary, of course, with the cement content and general quality of the brick, but there is no difficulty in making concrete bricks adequate for all normal uses. The resistance to frost should also be satisfactory.

Mould Growth on Cork Tiles.

An architect forwarded samples of cork tiles taken from a billiards room in the basement of a house. These had been bedded in a bituminous compound on a hard encaustic tile floor. The house, after remaining empty for

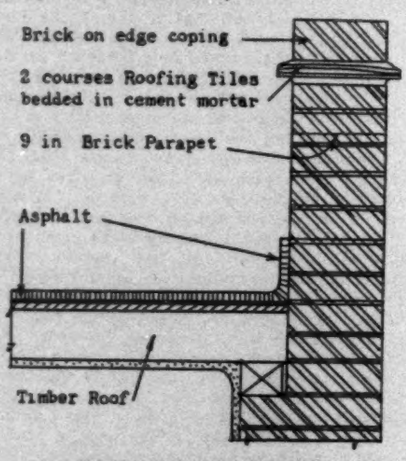
some years, had been redecorated and repaired, and in the course of this work dry rot was observed. The affected timber was cut out and the new timber creosoted. Recently a new outbreak of dry rot occurred in old timber left in the billiards room. Whilst there was no evidence that the cork had been attacked by the dry rot, there were signs of a mould growth between the cork tile and the encaustic tile where the former had not been solidly bedded in bitumen. The inquirer wished to know whether the cork could be relaid without fear of attack.

REPLY.—The sample of cork tiles referred to was submitted to the Forest Products Research Laboratory, who reported that, although there was mould growth present on the tiles, showing that there was sufficient moisture for fungus development, no dry rot was found. It was stated further, that while cork does not form a barrier against dry rot, it does not, on the other hand, provide food material for it. Attempts to infect cork with dry-rot fungus have so far proved fruitless, and it must be concluded that cork is immune from attack by this organism. It would appear that what was assumed to be dry rot beneath the cork tiles was actually a relatively harmless growth of mould.

Provided the original source of the dry rot had been properly attended to, and timber in the vicinity rendered resistant to dry rot by treatment with creosote or other preservative, there would be no objection to relaying the cork tiles. It was noted that the bitumen in which the tiles were bedded was by no means continuous, and in view of the apparent dampness in the floor, some additional care might be taken in this respect when relaying the floor.

Damp Penetration.

A firm of architects reported severe damp penetration through the brickwork of the walls of a building in a rather exposed position and desired that an inspection should be made by a representative of the Building Research Station. The examination of the building revealed that penetration had occurred near the parapet walls, and efflorescence had appeared both internally on the plaster and externally on the brickwork.



SECTION THROUGH PARAPET.

Two courses of tile breaking joint had been laid below the brick coping in the parapet wall, and a cement mortar had been used for bedding the brickwork. The general construction is shown in the sketch.

REPLY.—The inspection of the building revealed that the parapet walls were the major source of the trouble. It must be realised that parapets are exposed to exceptionally severe conditions, since the brickwork at these points offers opportunity for penetration at the top and two sides. The double row of tiles under the brick coping was by no means impenetrable, and it is recommended that parapets of this kind, particularly when exposed to severe weather conditions, as in the present case, should contain a horizontal damp-proof course forming a continuous waterproof surface with the roof covering. For example, a bituminous roof covering may be turned up to form a flashing and continued through the parapet, or, alternatively, a metallic damp-proof course and flashing may be inserted.

In considering the nature of the brickwork as a contributory factor, not only the nature of the bricks themselves but also the composition of the mortar used for jointing must be taken into account. Experimental work at the Building Research Station has confirmed the result frequently obtained in actual practice, that, from the point of view of rain exclusion, a dense mortar, though in itself relatively impermeable, may be an unsuitable jointing material. This may be explained by the greater tendency of such a mortar to shrink away from the bricks on drying, and form capillary paths to the interior of the wall. A mixture of lime and sand, gauged with a proportion of Portland cement according to the strength requirements of the work, is usually to be preferred to a cement-sand mortar for the production of a weather-resisting wall, and by this means the occurrence of efflorescence on the brick face may also be modified and diminished.

Exceptionally permeable bricks will, of course, allow penetration to occur independently of the joints, but the specimen brick obtained from the building under consideration appeared to be well burnt and of only moderate permeability. It is probable, therefore, in view of the fact that a fairly rich cement mortar had been used for jointing, that moisture penetration at the parapets has occurred mainly by way of the joints.

A parapet wall should be so designed that the possibility of penetration from the back and top of the wall is excluded. Penetration is still possible with a solid wall from the front, but the distance which the moisture must then travel before it reaches the interior will be much greater than the distance when penetration can occur at the back of the parapet.

Several suggestions might be offered for remedial measures in the present case. The most satisfactory of these would be, of course, a reconstruction of the parapets in the manner described above, but one of the following methods might be preferred on account of cost :—(*a*) Insertion of a damp-proof course under the coping and continuation down to meet the existing flashing or soakers; (*b*) covering the top surface of the coping and the back of the parapet with a protective coating such as bituminous paint or emulsion. This would require periodic renewal.

PUBLIC WORKS CONGRESS AND EXHIBITION

REVIEW OF EXHIBITS.—II.

THIS, the eighth, Public Works, Roads and Transport Exhibition and Congress (which opened at the Royal Agricultural Hall, Islington, on Monday, and closes to-day, Friday) is in many ways the best display of public works plant and contractors' machinery yet held at this hall. The increase in municipal works and constructional activity is largely responsible for this, no doubt, to which must be added the call for economy in operation—which cannot be achieved without up-to-date plant. Of this there is an abundance on exhibition, in roadmaking and concrete-making plant especially. At least two firms are making a special display of large-scale concrete making by weight plant, by which it is claimed that inaccuracies of aggregate proportioning are largely reduced.

A number of interesting papers were read during the week, one of which (by Dr. Thos. Adams) is reported on page 930.

A Novel Building System.

Architects will find a good deal to interest them, not least a new system of construction for commercial, domestic, public and other multi-storied buildings, where a minimum of space is required to yield a maximum of accommodation. Briefly, this HOENIC building system introduces an ingenious but simple principle of roads and ramps for the internal circulation of vehicular, passenger and trade traffic, in two defined, progressive, automatic streams. These streams—one of ingress and the other of egress—never cross, and as such the problems of local street congestion and of easy internal communication are solved. The systems introduce as a primary principle the division of floors at progressive levels throughout the building. Each floor consists of a succession of independent sections connected by ramps developing easy gradients. No floor section exceeds a height of 36 in. above that of the preceding section.

This interesting system of construction would seem to have applications to such structures as garages, coach stations and car parks, both overground and underground, warehouses, markets, hospitals, airports, etc. It is already, we learn, being applied to a conjoint market-and-coach station shortly to be erected by a Lancashire corporation. The system is applicable under licence, but the company maintains a technical staff to assist in the preparation of plans.

General Exhibits.

Among many paint and enamel exhibits on the ATLAS PRESERVATIVE CO., LTD.'s stand (No. 251), special interest attaches to the "Atlas Ruskilla" paint—a paint for protecting iron and steel structures with a covering which is both lasting and elastic. For engineers concerned with the maintenance of metal structures, this stand should be of more than ordinary value. BRITISH STEEL PILING CO., LTD., show on Stand 90 an interesting series of sections of steel sheet piling and of photographs showing the applications of their system. Details can also be obtained of their B.S.P. steel tubular scaffolding. Housing managers and others engaged upon housing maintenance should see the display of different types of cement-proofing work by "Tricosal" on Stand 25 (A. A. BYRD AND CO., LTD.) A show is also made of "Metaform" steel shuttering and of pneumatic compressor hose for road excavation work. The BRITISH THOMSON-HOUSTON CO., LTD., show on Stand 1 a wide range of floodlighting and street lighting equipment for use with "Mazda Mercra" and "Mazda Gasfilled" lamps. Road surveyors should inspect the B.T.-H. Mercra "H" lantern, designed to accommodate a standard "Mazda Mercra" lamp in horizontal position.

Iron goods for road, drainage and sewerage use are displayed on Stand 254 by BROAD AND CO., LTD. A speciality is made of non-rocking manhole covers, road gully gratings and frames, and there are a number of entirely new designs which are worth close inspection. BRIGHT'S ASPHALT CONTRACTORS, LTD., show on Stand 194 samples of genuine natural rock mastic asphalt (hand laid) taken from various roads—so that the wear-resisting qualities of their materials may be judged. Applications of natural rock asphalt to building uses (on floors, roofs, dampcourses, etc.) are also on view. BRITISH STEELWORK ASSOCIATION are represented at Stand 226, where technical and other literature dealing with all aspects of steel construction in bridges and general building may be freely obtained. Specialist advice on the modern development of steel bridge design from the point of view of economy and æsthetics is obtainable on the stand. A complete range of roadmaking materials is shown by the CROFT GRANITE, BRICK AND CONCRETE CO., LTD., on Stand 100. Specimens of concrete paving flags, plain and reinforced concrete tubes and concrete door hoods and brackets for housing schemes are other exhibits.

CUPRINOL, LTD. (Stand 173), are making an interesting display of wood and fabric preservatives. Standard "Cuprinol" is recommended for the protection of timber

against decay or dry rot and the attacks of wood-destroying insects. There are various grades for various purposes, but all are insoluble in water, and will not wash out. GEORGE COHEN, SONS AND CO., LTD., show (Stand 127) a variety of "Warsop" self-contained petrol-driven power picks and drills; a "Pegson" power rammer; and a "Premier" portable power emulsion sprayer for spraying cold emulsion (with a guaranteed output of 1 ton per hour). DUNLOP RUBBER CO., LTD., make a special display of pneumatic tyres—for barrows, trucks and trolleys. Such tyres not only diminish haulage effort, vibration and noise, but also appreciably lengthen the useful life of the vehicle, and are, in fact, a refinement which is also an economy. Expanded metal, in various forms, is shown on Stand 77 by THE EXPANDED METAL CO., LTD. For all forms of reinforced concrete and fire resistance construction, "Expamet" is recommended, while "B.B." metal lathing is used for giving a "key" for plaster. Municipal engineers should be interested in a display of models showing constructional details.

GOODWIN, BARSBY AND CO., LTD., show, on Stand 38, a number of their "Goodwin" stonebreaking and granulating machines. Only highest quality manganese steel is used for the jaw-faces, which gives a long life. Also shown is a 14-cu. ft. double-shaft paddle mixer for tarred bituminous mixtures. THE GENERAL ELECTRIC CO., LTD., devote their stand (No. 10) to displays of various types of modern street lighting fittings, floodlighting equipment and street traffic control equipment. Among the street lighting fittings shown are several designed for use with the "Osira" electric discharge lamp. HAILWOOD AND ACKROYD, LTD., show (Stand 11) a wide range of street lighting fittings, suitable for all positions, for electricity or gas. Glassware for street directional purposes and a most attractive range of school, hospital, ornamental and architectural fittings (these last of a more elaborate design and suitable for external or internal use in public buildings) is also displayed. A working model of the totally suspended "Tractum" chain-drive waterwheel sewage distributor is shown by JONES AND ATTWOOD, LTD., on Stand 98. There are many points incorporated in this distributor which are well worth investigation by those who require a really efficient compensating plant. Other working models of sewage treatment plant are also shown.

T. C. JONES AND CO., LTD., show on Stand 88 a "Super 8" petrol crane and a newly designed type of petrol crane which can be supplied in models, 12 cwt., 15 cwt. and 1 ton. The new models are fitted with power slewing and a patented single-lever control which dispenses with the need for a banksman. These cranes have been especially designed to stand up, with the minimum of attention, to hard wear on engineering contracts. Air compressors of large and small capacity for various industrial purposes are shown on Stand 257 by LACY-HULBERT AND CO., LTD. The main exhibit is a complete standard portable paint-spraying equipment which has a good many advantages for contracts where large surface areas require painting. Other smaller plants as well as an assortment of spray-guns, pneumatic tools, etc., are exhibited. THE LEWISHAM TIMBER CO., LTD., display fencings and sectional buildings on Stand 225. Park pale and cottage fencing in oak and chestnut are on view, with gates in many designs to suit each type of fencing. A principal exhibit in the sectional building department is the contractor's office, of ample strength and easily handled sections. MORRIS-COMMERCIAL CARS, LTD., show a 15 cu. yd. refuse collection vehicle with a 4-ton 13 ft. 6 in. wheelbase chassis and 24.8 h.p. engine. The body is of the rear-loading, moving-floor type, of steel construction, with aluminium roof (Stand 183).

PARKER, WINDER AND ACHURCH, LTD., exhibit a range of "Excelsior" screening equipment, and a machine of especial interest is the compact, complete portable screening plant, which should be of value to the small gravel-pit owner or public works contractor. This machine has an input of 50/60 tons daily, and will produce four sizes of material at small cost. It is driven by a 1½ h.p. "Lister" engine. This firm are also showing (Stand 15) "Parwinac" cycle racks and shelters. THE RUBEROID CO., LTD.—among an interesting display of jointings, damp-courses, etc.—demonstrate their "Pluvex" method of insulating bridges against percolation of surface water. There is a standard specification for "Pluvex" insulation to meet each type of construction—whether brick, masonry, ferro-concrete or steel. (Stand 192.) STOTHERT AND PITT, LTD., show on Stands 31 and 65 selections from their range of concreting plant. An oil-fired dryer, the "Super-Seven Victoria" mixer, various paddle-mixers and a 5/3½ cu. ft. tilting drum mixer are displayed, while vibratory screens and multi-bucket excavators are other machines shown of a type likely to attract the attention of the road surveyor. TUKE AND BELL, LTD., show on Stand 45 a combined gulley and cesspool-emptying outfit of 500 gallons capacity which should be of great practical value in rural areas. This is mounted on a "Karrier" chassis, complete with street-watering and channel-washing apparatus. A patent road-gritting attachment for treating slippery roads is also on view.

"TWISTEEL" REINFORCEMENT, LTD., show (on Stand 103) various types of "Twisteel" high-tensile and mild steel reinforcements, including square and longitudinal meshes, together with types of double-layer "mattress" reinforcement. A number of photographs of various works on which this reinforcement has been used are on view, as is also a special type of reinforcement for precast work. THE TILLEY LAMP CO. exhibit (on Stand 117) self-contained vapour pressure lamps and projector of a portable type. Paraffin-fed, these lamps give a brilliant, steady white light at a cost of 1d. for six hours. Floodlight, searchlight and spotlight projectors are also shown, as is a range of lamps and lanterns. VAUXHALL MOTORS, LTD., show three vehicles on Stand 177. One is a gulley and cess-pit emptier on a 3-ton wheelbase chassis; the second is a refuse van of similar chassis and of 10 cu. yd. capacity; and the third is a refuse wagon on 2-ton long wheelbase chassis of 7 cu. yd. refuse capacity. Several forms of metal casements and doors, constructed in "Reliance" sections, applicable to public buildings, offices, schools and residences, are shown by WILLIAMS AND WILLIAMS, LTD., on Stand 161. The vertically pivoted casement, shown fitted with "Reliance" adjustable friction pivot, is worthy of attention.

SUSSEX GUILD OF CRAFTSMEN

Speaking to the Conference of this body on November 2, Mr. J. L. Denman, F.R.I.B.A., offered the following advice to the craftsman of to-day: "I would first remind him that little in ancient craftsmanship was designed; things designed by a single mind are mostly 'sports,' which must quickly perish. No art that is one man's doing is worth much—it should be a thousand men deep. Only that which is in the line of some great development can persist. Nothing is good that has been done for looks; it may seem right at first, but quickly becomes diseased. Design is as nothing as compared with craftsmanship and only by being intensely real can we get back to good craftsmanship. All work that has any permanent value has been wrought to the ends it had to serve and the careful elaboration of it gives its maker scope for his pleasure and occasion for his pride.

"I think I can best summarise my remarks by exhorting you to be true to your material. Never, for instance, attempt to make cast iron look like wrought iron; eschew all make-believe and always remember that unless you see man's hand and hear his voice the product is not art. That is why machine-made articles are so tiresome; they have nothing to say. If a man really likes what he has got to do he will make great efforts to express his materials and will put the stamp of his individuality on his work."

BUILDERS' BENEVOLENT INSTITUTION

83rd ANNUAL DINNER.

THE eighty-third annual dinner of the Builders' Benevolent Institution was held on Tuesday, at the Hotel Victoria, W.C.2. The chair was occupied by Mr. Basil C. Aldous, F.I.O.B., President. Among the large gathering were Messrs. Ralph J. Holloway, E. H. Palmer, G. W. Tollett, A. Strachan Bennion, A. H. S. Lane, John M. Theobald, H. Clifford Mallett, H. H. D. Anderson, J. H. Rooff, F. M. May, George Gee, L. R. Guthrie, F. N. Gee, Stanley Hamp, R. J. Hugh Minty, O. E. Parratt, P. Fotheringham Parker, Harry Neal, Hugh Watkins, W. B. Binns, Thos. Tait, Ben Carter, A. B. H. Colls, Leslie Shingleton, M. W. Godson and W. J. Rudderham, secretary.

After the loyal toasts, Mr. John M. Theobald, F.S.I., proposed the toast of "The Builders' Benevolent Institution and Its President." He said it was an honour to do so, as it was the first time in the 88 years of the Institution that a quantity surveyor had done so. They all knew the good work that was being done by the Institution, which now had 47 pensioners. During the current year, no eligible candidate had been refused assistance. Referring to the President, he said that all knew of his capability. Since the death of his uncle, Mr. Frederick Higgs, of Messrs. F. and F. H. Higgs, much of the responsibilty had fallen upon him, and all knew how well he had acquitted himself.

Replying to the toast, the President said he was the third member of his family to occupy the chair. He wished to thank everybody for the wonderful response to his appeal for helping the work of the Institution. They had reached a total of £1,629, which was about £100 up on last year, and that extra would help the committee considerably in giving their usual Christmas gifts and for the mid-summer gift which was to help their pensioners to get a few days away. He concluded by thanking Mr. John M. Theobald for the way in which he had proposed the toast and for the remarks about himself.

The toast of "The Builders' Merchants and Allied Trades" was proposed by Mr. J. H. Rooff, President of the London Master Builders' Association, who said that there was no further need for him to emphasise the work the Institution was doing, and he thanked the Builders' Merchants and Allied Trades for the way they had supported the appeal. Mr. Harold H. D. Anderson, Chairman of the Cement Marketing Co., replied. Mr. Ben Carter, Hon. Auditor, proposed the toast of "The Visitors," in which he assured the company that every penny spent was carefully watched. Mr. Hugh Watkins, F.S.I., responded.

Housing and Town and Country Planning.

The importance of housing and town and country planning, not only to local authorities and their officials, but to a wider public, has led the Minister of Health to republish as a separate pamphlet that part of the annual report of the Ministry for 1934-35 which deals with these subjects. The pamphlet outlines present housing policy. It gives details of the progress made with the slum-clearance campaign, contains a summary of the main features of the Housing (Overcrowding) Act, 1935, and deals with the provision of new houses generally. A special section of the pamphlet is devoted to the important problem of the management and allocation of accommodation in connection with the public ownership of working-class houses. The pamphlet also deals among other things with the planning of the South Downs and the preservation of a green belt round London. There is also a record of some interesting decisions on appeals made to the Minister by intending developers. The publication, which is entitled "Housing and Town and Country Planning," is published by H.M. Stationery Office, price 1s.

NEW BUILDINGS IN LONDON

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned. Items should be received at THE BUILDER *Office not later than Wednesday morning.*

ALBERT - ROAD.—FLATS. — Are to be erected on a site bounded by Albert-road, Eamont-street, Frederick-street, Charlbert-street and Townsend-road, N.W., from plans by Messrs. Marshall and Tweedy, FF.R.I.B.A., 9, New Cavendish-street, W.1. The building contract has not yet been settled.

ALDGATE.—FACTORY.—The contract for the erection of the large factory in New-street and Aldgate-avenue, E.C.3, for Messrs. H. Lotery and Co., Ltd., has been placed with Messrs. Holloway Bros. (London), Ltd., Bridge-wharf, Millbank, S.W.1. The architects are Messrs. Hobden and Porri, 13, Great James-street, W.C.1.

BANSTEAD.—DEPOT.—The Express Dairy Co., Ltd., Tavistock-place, W.C.1, have acquired a site in the High-street for a new branch depot. The plans are being prepared by the company's staff architect. No contracts placed.

BLACKFRIARS-ROAD.—EXTENSION. — The old Surrey Theatre is now being demolished to make way for extensions to the Royal Eye Hospital. The architects for the new extension are Messrs. Young and Hall, 17, Southampton-street, W.C.1. No building contracts placed. The hospital authorities are appealing for £200,000 for the work.

BUSHEY HEATH.—LIBRARY.—The Hertfordshire C.C. are inviting tenders for the erection of a new library building. The architect is Mr. R. D. Eliott, 29, Bedford-row, London, W.C.1.

CHILD'S HILL. — REBUILDING. — Of the "Red Lion" public-house in Cricklewood-lane, N.W., is contemplated by Messrs. Truman, Hanbury, Buxton and Co., Ltd., Brick-lane, Spitalfields, E.

CLAPHAM.—ADAPTATION.—The L.C.C. has placed a contract with Messrs. Bridge and Co., Limited, 91-93, Effra-road, Brixton, S.W.2, at £13,847 for adaptation of 13, 15 and 17, Cedars-road, as a home for aged men.

CONDUIT-STREET. — SHOWROOMS. — The Esse Cooker Co., Ltd., have acquired premises for reconstruction as showrooms and offices. The plans have been prepared by Mr. Robert Love, A.R.I.B.A., 111, Union-street, Glasgow.

COULSDON.—EXTENSION.—The U.D.C. has appointed Mr. F. S. Henniker, F.S.I., 2, Robert-street, W.C.2, as quantity surveyor for the further extension to the Council Offices. The architects are Messrs. Nicholls and Hughes, 4, Raymond-buildings, Gray's Inn, W.C.1.

CROUCH HILL.—HOUSING.—The Islington B.C. are to acquire compulsorily 81, 83 and 85, Crouch-hill and 12, Warltersville-road for housing purposes. Mr. E. C. P. Monson, F.R.I.B.A., Finsbury Pavement House, Moorgate, E.C., is to prepare the plans for the working-class dwellings to be erected on the site, which will number about 60.

EALING.—FLATS.—Blocks containing 104 flats are to be erected at Goring-way and Ferrymead-gardens, by Messrs. Comben and Wakeling, Ltd., 25, Court-parade, North Wembley.

EALING.—SHOPS.—Mr. A. C. Geen, 8, Chester Place-mews, S.W.1, is the architect for Mr. W. Hollis, who proposes to erect 22 shops with flats over, at Hanger-lane and Queens-drive.

EALING.—SCHOOLS.—A site for the erection of a school in West Greenford has been offered to the E.C. The Borough Surveyor, Mr. F. J. Forty, is to continue negotiations in the matter. The Board of Education has been notified of the proposal to allocate part of the Dibdin House site, Hanger-lane, for a school site in the event of West Twyford being retransferred to the borough. Working drawings have been prepared of the proposed Walford School, Northolt, and sketch plans for the proposed senior girls' department at Perivale School have been approved by the Board of Education. The Board has suggested some amendments to the sketch plans of the Coston senior girls' school. Sketch plans of the proposed new block at Stanhope School, to include additional classrooms for infants and juniors and accommodation for a nursery class, were also approved.

EALING.—VESTRY.—St. Mary's (Ealing) Parish Church has appointed Mr. F. Hall-Jones, 11, Haven-green, W.5, as architect for the new vestry that is to be the memorial to the late Rev. C. J. Sharp.

ELTHAM.—CHURCH.—Plans have been prepared by Mr. Percy W. Meredith, F.R.I.B.A., 34, Old Queen-street, S.W.1, for a new Congregational Church. The contract has been placed with Messrs. F. and H. F. Higgs, Ltd., Station-works, Hinton-road, Herne Hill, S.E.

ENFIELD.—ESTATE.—Plans have been approved for the development of the South Lodge estate, showing the erection of 624 houses. The contractors are Messrs. John Laing and Son, Ltd., Mill Hill, N.W.7. The architects are Messrs. Arthur W. Kenyon, F.R.I.B.A., 21, Bedford-square, W.C.1, and Mr. David A. Adam, L.R.I.B.A., "Vinnycote," Mylespit Hill, Mill Hill, N.W.

ENFIELD.—HOUSES.—The Church Army Housing Society, 55, Bryanston-street, W.1, is negotiating for a site for about 50 houses. The plans will be prepared by the society's architects, Messrs. A. and J. Soutar, 8, King William-street, W.C.2.

ESHER.—PREMISES.—Plans have been approved for a large block of shops and flats, including a branch office for the National Provincial Bank, Ltd., in Portsmouth-road. The contractors are Messrs. Burnand and Pickett, Ltd., 14, Woodcote-road, Wallington. The bank architect is Mr. W. F. C. Holden, 15, Bishopsgate, E.C.3, whilst the surveyor is Mr. W. J. Bell, Portsmouth-road, Esher.

ESSEX.—BUILDING.—The C.C. has recommended the following: Sketch plans for the enlargement of the Dagenham Heathway Special School, at £3,833; acquiring Grange-court, Chigwell, for use as a boarding-house, and to erect a new library and enlarge the dining-hall at the school, at £6,350; sketch plans for the erection of the proposed County High School for Boys, Buckhurst Hill, at £45,236; to obtain land at the rear of Abbs Cross-lane, Hornchurch, as a site for the proposed County High School, at a cost of £7,000, plus £985 for fencing; sketch plans for the enlargement of the County High School for Girls, Woodford, at £17,823; sketch plans for the erection in semi-permanent construction of the proposed junior instruction centre, Dagenham, on part of the elementary school site in Frizlands-lane; to purchase land in Roding-road, Loughton, as a site for the Loughton proposed Council senior school; sketch plans for the erection of a District Education Office, Dagenham, at £1,694; to accept the tender of Messrs. F. R. Hipperson, Ltd., London, at £14,261, for the enlargement of the Chingford Chase-lane Council junior school; to accept the tender of the Harrison Smith Buildings, Ltd., Birmingham, at £7,870, for the erection of the Romford Collier-row proposed Council junior school; to purchase land approximately at the junction of New-road and Pick-hill, Waltham Abbey, as a site for the Upshire proposed Council junior school; and to accept the tender of Messrs. Hosking and Son (Essex), Ltd., Arterial-road, Rayleigh, at £34,520, for extensions to the nurses' home at the Oldchurch Hospital, Romford.

FRIERN BARNET.—SHOPS.—And flats, 15 of the former and 48 of the latter, are to be erected in Oakleigh-road, to plans prepared for Messrs. A. Auburn and Son, Estate Office, High-road, N.20.

GARRETT-LANE.—HOUSING.—The Wandsworth B.C. has approved the appointment of Mr. Ewart G. Culpin, F.R.I.B.A., 3, Portsmouth-street, W.C.2, as architect for the Garrett-lane housing scheme.

GREENFORD.—HOUSES.—Messrs. R. Lancaster and Sons, 30, Ealing-road, Wembley, are to erect 162 houses at Middleton-avenue, Daryngton-drive, Cayton-road, and Runnymede-gardens.

HILLINGDON. — ESTATE. — The Silver Estates, Wealdstone, are to develop a large estate in Long-lane, involving the erection of about 400 houses. The works will be carried out by Messrs. Silver and Graham, The Bridge, Wealdstone.

HIGHGATE. — GARAGE.—Mr. G. Alan Fortescue, F.R.I.B.A., 30, Bedford-square, W.C.1, is the architect for alterations and additions to a garage at Highgate.

LEICESTER-SQUARE. — GARAGE. — Mr. Ernest Schaufelberg, architect, 106, Jermyn-street, S.W.1, has submitted an application to the L.C.C. for the construction of an underground garage under the Leicester-square-gardens, W.C.2.

LONDON.—HOUSING.—The L.C.C. recommend the following schemes:—£31,000 for block 4 of dwellings on the Dinmont estate, Bethnal Green; £18,000 for the acquisition and clearance of properties in the Amias-place area, Finsbury; £30,000 for Dock cottages (Nos. 1 and 2) areas, Poplar; £23,000 for Garden-street area, Camberwell; £27,000, Haddo-street (Nos. 1 and 2) areas, Greenwich; £56,000 for Harrow-street (Nos. 1, 2 and 3) areas, St. Marylebone; £14,000 for Herring-street area, Camberwell; £104,000 for Sumner-road (Nos. 1 and 2) areas, Camberwell; £20,000 for Lant-street scheme, Southwark; £9,000 for North Wharf-road area, Paddington, and for transfer to the Housing Committee of part of the site of 75, Wandsworth-road.

MALDEN.—GARAGE.—And service station, etc., is to be erected in Malden-road for Messrs. Harrison and Jackson, to the plans of Mr. H. B. de Helsby. The builders are Messrs. Pell and Clayton, Ltd., Australia House, Aldwych, W.C.2.

MARYLEBONE-ROAD.—FLATS.—Are to be erected in Marylebone-road and High-street, W.1, from plans by Mr. B. Lee Rhoads, 16, Glentworth-street, N.W.1. No contracts placed.

MOTTINGHAM.—CHURCH. — The L.C.C. has recommended, subject to the consent of the M.H., the site in St. Keverne-road, Mottingham estate, be sold to the Church of England authorities for £1,100 for the erection of a church.

PARK ROYAL.—FACTORY.—Messrs. Metal Mouldings, Ltd., Great Western Estate, Park Royal-road, N.W.10, are to build a new factory. The contract has been placed with Messrs. F. and H. F. Higgs, Ltd., Station-works, Hinton-road, Herne Hill, S.E. The

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architect is Mr. G. Percy Pratt, A.R.I.B.A., 174, High-street, Acton, W.

PERIVALE. — FACTORY AND OFFICES. — Messrs. Jointless Walls and Ceilings, Ltd., are to have a factory and offices erected in Wadsworth-road, by Messrs. Percy Bilton (Construction), Ltd., 113, Park-street, W.1, plans for which have now been approved.

PERIVALE. — FACTORY. — Messrs. Percy Bilton (Properties), Ltd., 113, Park-street, W.1, have submitted plans for the proposed erection of a factory in Bideford-avenue for Mr. Jay.

PERIVALE. — STORE. — The British Electrical and Allied Industries Research Association are to erect a film store at the laboratories in Wadsworth-road, to plans by Mr. G. Cogswell, 2, Bedford-square, W.C.1.

POPLAR.—REBUILDING.—Of the "Brunswick Arms" public-house, Gaselee-street, E., involving the acquisition of the adjoining site at No. 30, is contemplated by Messrs. Mann, Crossman and Paulin, Ltd., Whitechapel-road, E.1. Plans have been prepared.

PORTLAND-PLACE.—FLATS.—No 57 has been sold and plans are to be shortly put in hand for the erection of a large block of flats on the site. The surveyors are Messrs. A. D. Macintosh and Co., 106, Mount-street, W.1.

PUTNEY. — ADDITIONS. — Messrs. W. Loweth and Sons, 67, Downs Park-road, Hackney, E.8, have secured the contract for alterations and additions to the "Cedar Tree" public-house, Putney Bridge-road, for Messrs. Watney, Combe, Reid and Co., Ltd., Stag Brewery, Pimlico, S.W.1. The plans are by the company's architect, Mr. A. W. Blomfield, F.R.I.B.A.

REGENT'S PARK.—FLATS.—Messrs. Stanley Hall, Easton and Robertson, FF.R.I.B.A., 54, Bedford-square, W.C.1, are the architects for flats to be erected at 13-18, St. Edmund's-terrace, N.W. The plans have been submitted to the Marylebone B.C.

RICKMANSWORTH.—SCHOOL.—The Herts E.C. have accepted the tender of Messrs. Melville, Dundas & Whitson, Ltd., 224, St. Vincent-street, Glasgow, at £21,772, for the proposed county school at Mill End. The plans have been prepared by Mr. Sydney Dawe, F.R.I.B.A., 83, High-street, Watford.

ROEHAMPTON.—FLATS.—Messrs. Minoprio and Spencely, AA.R.I.B.A., 18, Seymour-street, W.1, are about to develop the property known as "Lower Grove," Roehampton-lane, by the erection of flats. No building contracts placed.

ST. JOHN'S WOOD.—FLATS.—Are to be erected on a site abutting upon Barrow-hill-road, Charlbert-street, Henry-street and Upper William-street, from plans by Mr. H. K. Dyson, Charlbert-court, N.W.8. No contracts will be placed for some time.

SHEPPERTON. — STUDIOS. — Further important extensions are to be made to the film studios at Littleton Park, for Sound City, Ltd. Contracts will be placed shortly. The architects are Messrs. Connell, Ward and Lucas, 25, Grosvenor-place, S.W.1.

SILVERTOWN.—REBUILDING.—For the first portion of the rebuilding of the factory for the India Rubber Gutta Percha and Telegraph Works Co., Ltd., comprising ebonite shop, offices and stores, and engineer's shop, the tender of Messrs. John Mowlem, 91, Ebury Bridge-road, S.W.1, has been accepted at £89,292 1s. 8d. Mr. Thomas Jenkins, F.R.I.B.A., of Burton-on-Trent, is the architect. Constructional steelwork will be supplied by Messrs. Dorman, Long & Co., Ltd., of Middlesbrough.

SNODLAND.—EXTENSION.—The Mid-Kent Water Co. are to extend their offices at Ivy-meath. The contract has been placed with Messrs. R. Corben and Son, Ltd., West Borough, Maidstone. The architect is Mr. S. L. Bundy, Council Offices, High-street, West Malling.

SOUTH HORNCHURCH.—SCHOOLS.—The Essex C.C. are inviting tenders for the erection of the South Hornchurch proposed Council senior school, and for the enlargement of South Hornchurch Council junior school. Mr. J. Stuart, F.R.I.B.A., County Architect, Chelmsford, prepared the plans.

STANMORE.—FLATS.—The Harrow U.D.C. has approved plans submitted by Messrs. G. E. Clare and Son, architects and surveyors, 15, College-road, Harrow, for Mr. H. J. Clare, builder, Estate Office, Old Church-lane, Stanmore, for the erection of 66 flats in two blocks, assembly hall and 30 lock-up garages in Old Church-lane.

TOOTING.—FLATS.—The Wandsworth B.C. recommend that Messrs. C. F. Hawkins and Co., Limited, 33, Linden-grove, S.E.15, erect a further 42 flats on the Tooting-grove site.

UPPER BAKER-STREET. — ADDITIONS.—Mr. Herbert Brown, of 30, College Hill-road, Harrow Weald, is carrying out the extensions by the erection of an additional story to Abbey House, Upper Baker-street and Park-lane, St. Marylebone, for the Abbey Road Building Society. Mr. J. J. Joass, 40 St. James's-place, S.W.1, is the architect.

WALTHAMSTOW. — ALTERATIONS.—And additions are to be made to the departmental stores at 269-277, Hoe-street, E.11, for the London Co-operative Society, Ltd., 54, Maryland-street, Stratford, E. The work will be carried out by the society's building department, Gladdings-road, Ilford, under the direction of the works manager, Mr. A. Hulbert, M.Inst.Struct.E., who prepared the plans.

WALTHAMSTOW. — FLATS. — Messrs. Alliston and Drew, 28, Brunswick-square, W.C.1, are the architects for two blocks of flats in Garner-road. No contracts placed.

WEMBLEY.—FLATS.—No building contracts yet settled for the 12 flats with garages in Ealing-road. The architect is Mr. H. Kenchington, F.R.I.B.A., 7, Staple Inn, Holborn, W.C.1.

WEMBLEY. — SCHOOL. — The Wembley U.D.C. has given consent to the Rev. G. L. Smith to build a school next to the Catholic Church in Hay-lane.

WEMBLEY.—TOWN HALL.—Tenders for the new Wembley Town Hall and municipal offices, which, it is estimated, will cost £116,979, will probably be invited next March. Mr. Clifford Strange, 31, Upper Montagu-street, W.1, is the architect. Mr. O. E. Parratt, F.S.I., Adelaide House, King William-street, E.C.4, has been appointed quantity surveyor.

WEST EALING.—PREMISES.—The contract for a block of shops, etc., in the Broadway, W., has been placed with Messrs. Joseph Dorey and Co., Ltd., High-street, Brentford. The architects are Messrs. Hall-Jones and Partners, Parliament-mansions, Victoria-street, S.W.1.

WESTMINSTER BRIDGE - ROAD.—REBUILDING.—Messrs. Truman, Hanbury, Buxton and Co., Ltd., Spitalfields Brewery, E.1, have under consideration the rebuilding of their "New Crown and Cushion" public-house at No. 133. No contracts have been placed yet.

WILLESDEN.—SHOPS.—No contracts yet placed for the shops and flats to be built in the North Circular-road, N.W., from plans prepared by Mr. William Thorpe, F.S.I., 26, The Broadway, Mill Hill, N.W.7.

WOOLWICH.—ALTERATIONS.—And additions are to be made to the "Shakespeare" public-house, Powis-street, S.E.18, for Messrs. Watney, Combe, Reid and Co., Ltd., Stag Brewery, S.W.1. The cost is estimated at about £7,500. The company's architect is Mr. A. W. Blomfield, F.R.I.B.A. No contracts placed.

NO SHORTAGE
NO
HIGHER PRICES
MARBLE
JOHN STUBBS & SONS
64-70 VAUXHALL BRIDGE ROAD SW1
272 CROWN STREET LIVERPOOL 7

THE RATING OF EMPTY PROPERTIES IN LONDON

The London County Council is proposing to rescind certain decisions made on May 28 last relating to the promotion of legislation for the rating of empty properties, and is to promote legislation to the following ends :—

(i) The owner of any unoccupied property which it is intended within a period of two years to demolish, or to alter structurally to a substantial extent, to be exempt from "empty rate" from the date of a notice served on the rating authority intimating such intention and stating that it is intended not to permit the property to be reoccupied until after such redevelopment or substantial alteration, provided that the rating authority be given power to recover "empty rate" retrospectively as from the date of the notice in the event of the stated intentions not being fulfilled.

(ii) Rating authorities, on application made and proof by the owner, to grant exemption from "empty rate" in cases in which properties are unoccupied by reason of—

(1) Negotiations for the sale or letting being unavoidably delayed, but such exemption is not to apply to properties which when last occupied were used for residential purposes unless they will not again be used in whole or in part for those purposes; and

(2) (in the case of industrial hereditaments within the meaning of the Rating and Valuation (Apportionment) Act, 1928), the difficulty of letting the property at a rent equivalent to the net annual value as appearing in the valuation list, and owners to have a right of appeal from the decision of the rating authority to a court of summary jurisdiction; the maximum exemption under these provisions not to exceed, in the aggregate, six months in any period of three years.

The Central Tower, London University.

Sanction has been given by the L.C.C. to the erection of the central tower that will dominate the new London University buildings in Bloomsbury. This will be 210 ft. high. The base of the tower was started last month, but the whole structure is not expected to be completed before 1937. It will have eight stories, several of which will be used for storing books for the library, which is to be in the base.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st JULY, 1935.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Crafts-men.	Lab-ourers.
Aberdare	1/5½	1/1½
Abergavenny	1/5½	1/1½
Abingdon	1/4½	1/0½
Accrington	1/6	1/1½
Aldeburgh	1/2	10½
Aldershot	1/3	11½
Alfreton	1/6	1/1½
Alnwick	1/5½	1/1½
Altrincham	1/6	1/1½
Amble	1/5½	1/1½
Amersham	1/4	1/-
Ammanford	1/6	1/1½
Andover	1/3	11½
Ardingly	1/4	1/-
Arundel	1/3½	11½
Ascot	1/4	1/-
Ashby-de-la-Zouch	1/4½	1/0½
Ashford (Kent)	1/3	11½
Ashford (Middx.)	1/5	1/0½
Ashington	1/5½	1/1½
Ashtead	1/4½	1/0½
Ashton-under-Lyne	1/6	1/1½
Aylesbury	1/3½	11½
Aylsham	1/3	11½
Bagshot	1/3	11½
Banbury	1/3½	11½
Barnsley	1/6	1/1½
Barnstaple	1/4	1/-
Barrow-in-Furness	1/6	1/1½
Barry	1/6	1/1½
Basingstoke	1/3½	11½
Bath	1/5	1/0½
Batley	1/6	1/1½
Beaconsfield	1/4	1/-
Beccles	1/2½	11
Bedford	1/5	1/0½
Berkhamsted	1/3½	11½
Berwick	1/5	1/0½
Beverley	1/6	1/1½
Bexhill-on-Sea	1/4	1/-
Bideford	1/4	1/-
Biggleswade	1/3½	11½
Billericay	1/3½	11½
Birchington	1/3½	11½
Birkenhead	1/7½‡	1/3
Birmingham	1/6	1/1½
Bishop Auckland	1/5½	1/1½
Bishops Stortford	1/4½	1/0½
Blackburn	1/6	1/1½
Blackpool	1/6	1/1½
Blyth	1/6	1/1½
Bognor Regis	1/3½	11½
Bolton	1/6	1/1½
Bournemouth	1/5	1/0½
Bracknell	1/3½	11½
Bradford	1/6	1/1½
Bradford-on-Avon	1/3•	11½
Braintree	1/4	1/-
Brentwood	1/5½	1/1½
Bridgwater	1/4	1/-
Bridlington	1/5½	1/1½
Brighouse	1/6	1/1½
Brighton	1/5	1/0½
Bristol	1/6	1/1½
Broadstairs	1/3½	11½
Bromsgrove	1/5	1/0½
Buckley	1/6	1/1½
Bungay	1/2	10½
Burnham-on-Crouch	1/2½	11
Burnley	1/6	1/1½
Bursiem	1/6	1/1½
Burton-on-Trent	1/6	1/1½
Bury	1/6	1/1½
Bury St. Edmunds	1/3½	11½
Buxton	1/5½	1/1½
Byfleet	1/4	1/-
Cambridge	1/5½	1/1½
Canterbury	1/3½	11½
Cardiff	1/6	1/1½
Carlisle	1/6	1/1½
Carnforth	1/6	1/1½
Castleford	1/6	1/1½
Caterham	1/4½	1/0½
Chard	1/3•	11½
Chatham	1/4½	1/0½
Chelmsford	1/4½	1/0½
Cheltenham	1/4½	1/0½
Chepstow	1/5	1/0½
Chertsey	1/4½	1/0½
Chester	1/6	1/1½
Chesterfield	1/6	1/1½
Chichester	1/3½	11½
Chorley	1/6	1/1½
Cirencester	1/3½•	11½
Clacton	1/4	1/0
Cleveleys	1/6	1/1½
Clitheroe	1/6	1/1½
Cobham	1/4½	1/0½
Colchester	1/5	1/0½
Colwyn Bay	1/5	1/0½
Congleton	1/5½	1/1½
Coventry	1/6	1/1½
Cranbrook	1/2½	11
Cranleigh	1/3	11½
Crawley	1/4	1/-
Crewe	1/5	1/0½
Cromer	1/3	11½
Crowborough	1/4	1/-
Cuckfield	1/4	1/-
Darlington	1/6	1/1½
Darwen	1/6	1/1½
Daventry	1/4½	1/0½
Deal	1/3½	11½
Denbigh	1/4½	1/0½
Derby	1/6	1/1½
Devizes	1/2½•	11
Dewsbury	1/6	1/1½
Didcot	1/4	1/0
Diss	1/2½	11
Doncaster	1/6	1/1½
Dorchester	1/3½•	11½
Dorking	1/4	1/-
Dover	1/3½	11½
Dovercourt	1/4	1/-
Driffield	1/4½	1/0½
Droitwich	1/5	1/0½
Dudley	1/6	1/1½
Dunstable	1/4	1/-
Durham City	1/6	1/1½
Easthourne	1/5	1/0½
E. Glam. (Mon. Val.)	1/5½	1/1½
East Grinstead	1/4	1/-
Edenbridge	1/4	1/-
Ely	1/2½	11
Epping	1/5	1/0½
Exeter	1/5†	1/0½
Exmouth	1/4	1/-
Fakenham	1/2½	11
Falmouth	1/4½	1/0½
Fareham	1/3½	11½
Faversham	1/3	11½
Felixstowe	1/4½	1/0½
Filey	1/4½	1/0½
Fleetwood	1/6	1/1½
Flint	1/5½	1/1½
Folkestone	1/3½	11½
Frinton-on-Sea	1/4	1/-
Frome	1/3•	11½
Gainsborough	1/5	1/0½
Gateshead	1/6	1/1½
Gillingham	1/4½	1/0½
Glossop	1/6	1/1½
Gloucester	1/5†	1/0½
Godalming	1/4	1/-
Goole	1/5	1/0½
Gosport	1/5	1/0½
Grantham	1/4½	1/0½
Gravesend	1/5½	1/1½
Gt. Yarmouth	1/4	1/-
Grimsby	1/6	1/1½
Guildford	1/4	1/-
Guilsborough	1/4½	1/0½
Halifax	1/6	1/1½
Hanley	1/6	1/1½
Harpenden	1/4½	1/0½
Harrogate	1/6	1/1½
Hartlepools	1/6	1/1½
Harwich	1/4	1/-
Haslemere	1/3	11½
Hastings	1/3½	11½
Hatfield	1/5	1/0½
Haywards Heath	1/4	1/-
Hednesford	1/5½	1/1½
Hemel Hempstead	1/5	1/0½
Henley	1/4	1/-
Hereford	1/4•	1/-
Herne Bay	1/3½	11½
Hertford	1/5	1/0½
Heysham	1/6	1/1½
Hitchin	1/4½	1/0½
Hoddesdon	1/5	1/0½
Holt	1/2	10½
Horley	1/3½	11½
Horsham	1/3½	11½
Horwich	1/6	1/1½
Huddersfield	1/6	1/1½
Hull	1/6	1/1½
Hunstanton	1/2½	11
Huntingdon	1/3	11½
Ilfracombe	1/4	1/-
Ingatestone	1/3½	11½
Ipswich	1/5	1/0½
Isle of Thanet	1/3½	11½
Isle of Wight	1/3	11½
Keighley	1/6	1/1½
Kenilworth	1/6	1/1½
Kettering	1/5½	1/1½
Kidderminster	1/5	1/0½
Kings Lynn	1/3½	11½
Kirkham	1/6	1/1½
Knowle	1/5½	1/1½
Lancaster	1/6	1/1½
Leamington	1/5½	1/1½
Leatherhead	1/5	1/0½
Leeds	1/6	1/1½
Leicester	1/6	1/1½
Leighton Buzzard	1/3	11½
Letchworth	1/4½	1/0½
Lewes	1/2½	11
Lichfield	1/5	1/0½
Lincoln	1/6	1/1½
Littlehampton	1/3½	11½
Liverpool	1/7½‡	1/3
Llandudno	1/5	1/0½
Llanelly	1/6	1/1½
London—		
12 m. radius	1/7½•	1/2½
12-15 m. radius	1/7•	1/2½
Long Eaton	1/6	1/1½
Longton	1/6	1/1½
Loughborough	1/6	1/1½
Louth	1/4½	1/0½
Lowestoft	1/4	1/-
Luton	1/5½	1/1½
Macclesfield	1/5½	1/1½
Maidenhead	1/4½	1/0½
Maidstone	1/4½	1/0½
Malvern	1/4½	1/0½
Manchester	1/6	1/1½
Manningtree	1/2½	11
Mansfield	1/6	1/1½
March	1/3	11½
Margate	1/3½	11½
Market Harborough	1/5	1/0½
Matlock	1/4½	1/0½
Melton Constable	1/2	10½
Melton Mowbray	1/5	1/0½
Merthyr Tydfil	1/5½	1/1½
Middlesborough	1/6	1/1½
Middleton	1/6	1/1½
Middlewich	1/5	1/0½
Milford Haven	1/4	1/-
Morecambe	1/6	1/1½
Morley	1/6	1/1½
Mundesley	1/3	11½
Nantwich	1/5	1/0½
Newark-on-Trent	1/5	1/0½
Newbury	1/3½	11½
Newcastle-on-Tyne	1/6	1/1½
Newcastle-u.-Lyme	1/6	1/1½
New Forest	1/3	11½
Newmarket	1/4	1/-
Newport, Mon.	1/6	1/1½
Newport Pagnell	1/3	11½
Northampton	1/6	1/1½
Norwich	1/5½	1/1½
Nottingham	1/6	1/1½
Nuneaton	1/6	1/1½
Oakham	1/4½	1/0½
Oldham	1/6	1/1½
Ormskirk	1/6	1/1½
Oxford	1/5½	1/1½
Oxted	1/3	11½
Paignton	1/5½	1/1½
Peterborough	1/5½	1/1½
Plymouth	1/6†	1/1½
Pontypridd	1/5½	1/1½
Portsmouth	1/5	1/0½
Port Talbot	1/6	1/1½
Preston	1/6	1/1½
Pulborough	1/2½	11
Ramsgate	1/3½	11½
Reading	1/5	1/0½
Redditch	1/5	1/0½
Redhill	1/4	1/-
Reigate	1/4	1/-
Retford	1/4½	1/0½
Rickmansworth	1/5½	1/1½
Ripon	1/4½	1/0½
Rochdale	1/6	1/1½
Rochester	1/4½	1/0½
Rugby	1/6	1/1½
Saffron Walden	1/2½	11
St. Albans	1/5½	1/1½
St. Helens	1/6	1/1½
St. Neots	1/3	11½
Salisbury City	1/3•	11½
Salisbury Plain	1/3•	11½
Sawbridgeworth	1/4	1/-
Saxmundham	1/2	10½
Scarborough	1/5½	1/1½
Selby	1/6	1/1½
Sevenoaks	1/4½	1/0½
Sheerness	1/3½	11½
Sheffield	1/6	1/1½
Shipley	1/6	1/1½
Shoeburyness	1/5½	1/1½
Shoreham	1/4½	1/0½
Shrewsbury	1/5	1/0½
Sittingbourne	1/3	11½
Skegness	1/5	1/0½
Sleaford	1/4½	1/0½
Slough	1/5	1/0½
Southampton	1/5	1/0½
Southend-on-Sea	1/5½	1/1½
Southport	1/6	1/1½
South Shields	1/6	1/1½
Spalding	1/3½	11½
Stafford	1/5½	1/1½
Staines	1/5	1/0½
Stamford	1/4½	1/0½
Stevenage	1/4½	1/0½
Stockport	1/6	1/1½
Stockton-on-Tees	1/6	1/1½
Stoke-on-Trent	1/6	1/1½
Stourbridge	1/5½	1/1½
Stourport	1/5	1/0½
Stowmarket	1/2½	11
Stratford-on-Avon	1/4½	1/0½
Stroud	1/4½†	1/0½
Sunderland	1/6	1/1½
Sutton Coldfield	1/6	1/1½
Swaffham	1/2	10½
Swanage	1/4•	1/-
Swansea	1/6	1/1½
Swindon	1/4½•	1/0½
Tamworth	1/5½	1/1½
Taunton	1/4	1/-
Tenterden	1/3	11½
Tewkesbury	1/4½•	1/0½
Thetford	1/2½	11
Thorpe Bay	1/5½	1/1½
Todmorden	1/6	1/1½
Tonbridge	1/4½	1/0½
Torquay	1/5½	1/1½
Totnes	1/4†	1/-
Trowbridge	1/3•	11½
Truro	1/3	11½
Tunbridge Wells	1/4½	1/0½
Uppingham	1/4½	1/0½
Uttoxeter	1/4½	1/0½
Wakefield	1/6	1/1½
Walsall	1/6	1/1½
Walsden	1/6	1/1½
Walton-on-Naze	1/4	1/-
Ware	1/5	1/0½
Warminster	1/3•	11½
Warrington	1/6	1/1½
Warwick	1/5½	1/1½
Wellingborough	1/5½	1/1½
Wells (Norfolk)	1/2	10½
Welwyn	1/5	1/0½
Welwyn Gar. City	1/6	1/1½
West Bromwich	1/6	1/1½
Westcliff-on-Sea	1/5½	1/1½
Weston-super-Mare	1/5	1/0½
Weybridge	1/4½	1/0½
Weymouth	1/3½•	11½
Whitby	1/5	1/0½
Whitstable	1/3½	11½
Widnes	1/6	1/1½
Wigan	1/6	1/1½
Wigton	1/4½	1/0½
Willington	1/5½	1/1½
Wilmslow	1/6	1/1½
Winchester	1/4	1/-
Windermere	1/4½	1/0½
Windsor	1/5	1/0½
Wisbech	1/3	11½
Witham	1/4	1/-
Woking	1/4	1/-
Wokingham	1/4	1/-
Wolverhampton	1/6	1/1½
Woodbridge	1/3	11½
Worcester	1/5	1/0½
Workington	1/4½	1/0½
Worksop	1/5	1/0½
Worthing	1/3½	11½
Wrexham	1/5½	1/1½
Wroxham	1/3½	11½
Wycombe	1/4½	1/0½
Wymondham	1/2½	11
Yeovil	1/4•	1/-
York	1/6	1/1½

• Painters 1d. less than other Craftsmen. † Painters, ½d. less than other Craftsmen. ‡ Plasterers 1s. 8½d.

For Building Trade Wages in Scotland, see page 946.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

NOVEMBER 25.

Bedford.—Brickwork Pointing.—To upper 15 ft. on sides of Corn Exchange, St. Paul's-sq., for T.C. Charles H. Blakeway, B.E. and S., Newnham House, Horne-ln.

Belfast.—Installation.—Of electrically heated hot water supply, etc., to Floral Hall, Hazelwood (Bellevue-gdns.), Antrim-rd., for T.C. City S (Architectural Section, Room 91), City Hall. Dep. £2 2s.

Bellingham.—Conversion.—Of P.A. Institution into offices and cottages, for R.D.C. J. Wightman Douglas, architect and surveyor, 27, Bondgate Without, Alnwick.

Blackpool.—Erection.—Of gymnasium at technical college, for C.B. T.C. Dep. £2 2s.

Bradford.—Colouring.—At various schools, for E.C. City Architect.

Chelmsford.—Special Works.—And materials in connection with Public Health Dept. and Welfare Centre, for T.C. B.E. and S.

Chelmsford.—Cottages.—Five pairs in Brook-ln., Galleywood, Great Baddow, for R.D.C. S. Dep. £2.

Dulverton.—Houses.—4, at Brompton Regis in part of Field O.S., No. 1055, for R.D.C. Sanitary Surveyor.

Ebbw Vale.—School.—On north-east side Beaufort Fields-rd., Glyncoed, for U.D.C. J. S. Hodges, Chief Financial Officer, Armoury Hill Offices. Dep. £5.

Fisherie.—Cottages.—Two blocks at Fisherie, King Edward, for Aberdeen C.C. W. L. Duncan, architect, Turriff.

Grimsby.—Erection.—Of Customs and Excise offices at docks, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Hartlepool.—Houses.—154, on West View housing estate, also sewers and roads, for T.C. J. H. Miers, B.E. Dep. £3 3s.

Inverbervie.—School.—For Kincardine C.C. D. & J. R. M'Millan, architects, 105, Crown-st., Aberdeen.

Islington.—Erection.—Of 3 shelters at cemetery, East Finchley, for B.C. B.E., Town Hall, Upper-st., N.1.

Kettering.—Erection.—Of pavilion in Rockingham-rd. pleasure ground, for U.D.C. Clerk. Dep. £1 1s.

Manchester.—Demolition.—Of approx. 462 houses on Collyhurst clearance area, for T.C. Housing Director.

Ploughley.—Reconstruction.—Of 5 detached cottages at Gravel Pits, Kidlington, for R.D.C. N. W. Harrison, F.R.I.B.A., architect, 5, Turl-st., Oxford. Dep. £1 1s.

Pontypridd.—Alterations.—And additions at police station and court, for Glamorgan C.C. Henry Rowland, clerk, Glamorgan County Hall, Cardiff.

Poole.—Tenements.—At Russell-pl., for T.C. E. J. Goodacre, B.E. and S. Dep. £1 1s.

Rhondda.—Houses.—40, at Church-st. and William-st., Trealaw; also filtration plant for three swimming pools, for U.D.C. E. Taylor, E. and S. Dep. £1 1s.

South Shields.—Clinic.—On site adjoining existing clinic, Stanhope-rd., for T.C. J. Glover, architect, 53, King-st. Dep. £5 5s.

West Riding.—Various School Work.—For C.C. Education Officer, Wakefield.

Worthing.—Extension.—To post office and telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

NOVEMBER 26.

Bubwith.—Houses.—For East Riding Standing Joint Committee. Godfrey MacDonald, clerk, County Hall, Beverley. Dep. £1 1s.

Chesterfield.—Erection.—Of postal garage, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Croydon.—Erection.—Of mess-room accommodation, lavatories, etc., at seven of road depots, for C.B. T.C. Dep. £2 2s.

Exeter.—Construction.—Of concrete retaining wall, Cricklepit-st., for T.C. R. H. Dymond, City E. and S., 7, Southernhay West.

Kemsworth.—Houses.—55, in Ackworth, for R.D.C. W. T. Lynam, E. and S.

Ilkeston.—Construction.—Of small sewage pumping station at Hallam Fields, for T.C. B.E. Dep. £2 2s.

Liverpool.—Bowls House.—Shelter and conveniences at Stanley-pk, for T.C. Land Steward and Surveyor.

London.—Erection.—Of block of 70 flats in Clarissa-st., Haggerston, E.8, for Shoreditch B.C. B.S., Old-st., E.C.1. Dep. £5.

Portslade.—Painting.—And repairs to houses on Church-rd. housing estate, for U.D.C. D. V. Howard, S. Dep. £1 1s.

Seaton Valley.—Erection.—Of 3 water closets and 36 coalhouses at Seghill, for U.D.C. S.

Tullamore.—Station.—For Garda Siochana, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1.

Whitby.—Café.—Bathing cubicles and conveniences on foreshore, for U.D.C. E. and S., Council Offices, Flowergate. Dep. £5.

Whitchurch.—Convenience.—For Kingsclere and Whitchurch R.D.C. W. A. Cooper, clerk, Council Offices, Kingsclere, Newbury. Dep. £1 1s.

NOVEMBER 27.

Cork.—Erecting.—Low-pressure hot-water warming installation at Maternity Hospital, County Home, for South Cork County Board of Public Assistance. J. Hegarty, acting secretary, Boardroom, Douglas-rd.

Derby.—Laundry Rooms.—At City Hospital, and alterations and additions to sanatorium block; "C" block; and administrative block at Infectious Diseases Hospital, for T.C. C. H. Aslin, F.R.I.B.A., Borough Architect. Dep. £1 1s.

Harrogate.—Painting.—To part of Municipal Offices, and Senior School, New Park School, for T.C. C. E. Rivers, B.E.

Harrogate.—Painting, etc.—Of Royal Bath Hospital, for Management. Secretary.

Hinckley.—Houses.—30, on Bradgate-rd., Barwell, for R.D.C. Crump & Horrocks, architects, Barclays Bank-chambers. Dep. £3 3s.

Kilmarnock.—Installation.—Of heating system in Municipal Offices, Green-st., for T.C. W. Dunbar, B.S., Market Bridge, Kilmarnock.

Liverpool.—Erection.—Of 44 flats on Horatio-st. and Lawrence-st. site, for T.C. Director of Housing, Municipal Annexe, Dale-st. Dep. £2 2s.

Liverpool.—Shops.—2, and residence, Broadway, Norris Green estate, for T.C. Director of Housing. Dep. £1 1s.

Llanfyllin.—Houses.—5, at Llanfair C., Welshpool, for R.D.C. R. Arthur Jones, S., "Bwthyn-Hedd," Llanfyllin. Dep. £2 2s.

Rochdale.—Houses.—232, on Brotherod Hall estate, and construction of roads and sewers in connection therewith, for T.C. S. H. Morgan, B.S. Dep. £2 2s.

Sedgley.—Painting.—Of ironwork at Gospel End disposal works and Goldthorn estate pumping station, for U.D.C. A. E. Dicks, S. Dep. 10s.

Ware.—Erection.—Of 11 bungalow-type dwellings on two sites in Bowling-rd., for U.D.C. R. W. Grantham, E. and S., The Priory. Dep. £2 2s.

Widnes, Lancs.—Erection.—Of telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Youghall.—Painting.—At new cottage hospital, for South Cork P.A.C. Architect, B. O'Flynn, 60, South-mall, Cork. Dep. £5.

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NOVEMBER 28.

Anstruther.—Fish Sale Ring.—And rest room at harbour, for Commissioners. Hugh C. Mackintosh, solicitor, National Bank-bldgs. Dep. £1.

Cardiff.—Piggeries.—At Ely Lodge, Cowbridge-rd., for T.C. G. H. Whitaker, City Architect.

Clevedon.—Houses.—8, on Hill View-ave. estate, Kem-rd., for U.D.C. J. Leach, S., Old-st. Dep. £2 2s.

Clitheroe.—Painting.—Of old fire station, Moorlane, for T.C. B.E. and S.

Coventry.—Erection.—Of head post office and telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Ealing.—Bandstand.—In Elthorne Park, Hanwell, and carrying out of repairs to parks machinery, for T.C. Parks Superintendent, Town Hall, Ealing.

NOVEMBER 29.

Abertillery.—Erection.—Of employment exchange, for H.M.O.W. Room 65D, Third Floor, H.M.O.W., London, S.W.1. Dep. £1.

Atherstone.—Houses.—30, in Atherstone and Polesworth, for R.D.C. E. and S. Dep. £2 2s.

Bexley.—Construction.—Of public conveniences, High-st., Bexley, and Toynley-rd., Bexleyheath, for U.D.C. G. A. Joy. Dep. £5.

Cambridgeshire.—Cottage.—And farm buildings at Steeple Morden and cottage at Whaddon, for C.C. County Agricultural Officer, Shire Hall, Cambridge.

Darfield.—Houses.—38, off Woodhall-ln., for U.D.C. Dyson, Cawthorne & Coles, architects, 25, Regent-st., Barnsley.

Dublin.—Construction.—Of reinforced concrete structures for erection of covered stand and incidental works at Croke Park, for Gaelic Athletic Association, Ltd. Nicholas O'Dwyer, consulting engineer, Veritas House, Lower Abbey-st. Dep. £10 10s.

Essex.—Reconstruction.—Of Shire Hall, for C.C. J. Stuart, F.R.I.B.A., Chelmsford. Dep. £2 2s.

London.—Construction.—Of foundations of Central Highways depot and garage in Gatliff-rd., S.W.1, for Westminster City, Drower & Broughton, quantity surveyors, 28, Victoria-st. Dep. £2.

***Luton.**—Extensions.—To transport depot, Park-st., for T.C. B.E. and S. Dep. £3 3s.

Neath.—Houses.—10 houses at Pentre-st., Glyneath, and 12 at Sefn-yr-allt, Aberdulais, for R.D.C. J. T. Jones, E., 13, Orchard-st. Dep. £2 2s.

Slough.—Supply.—And erection of unclimbable wrought-iron railings and double gates, Cippenham recreation ground, Station-rd., for U.D.C. Alan Bromly, E. and S.

Southampton.—Dormitory Block.—And additions to existing buildings at Camp School, Stubbington-ln., Lee-on-the-Solent, for T.C. B.E. Dep. £1 1s.

***Warwick.**—Alterations and Additions.—To King Edward VII. Memorial Sanatorium, Hertford Hill, for Warwickshire and Coventry Joint Committee for Tuberculosis. A. C. Bunch, architect. Dep. £2 2s.

NOVEMBER 30.

Battle.—Stores.—Workshops and motor garage, for R.D.C. Housing Department, Council Offices, Watch Oak. Dep. £1 1s.

Bedford.—Erection.—Of junior school at Harrold, for C.C. County Surveyor. Dep. £1 1s.

***Birmingham.**—Erection.—Of coroner's court, etc., in Newton-st., for T.C. T.C. Dep. £3 3s.

Brighton.—Erection.—Of 24 staff houses at Mental Hospital, Haywards Heath, for C.B. B.E. and S. Dep. £2 2s.

Cowbridge.—Houses.—4, at Broadway, St. Athan, and The Graig, Penllyn, for R.D.C. Edward Loveluck, A.R.I.B.A., 12, Dunraven-pl., Bridgend. Dep. £3 3s.

Filey.—Houses.—82, adjoining Scarborough-rd., for U.D.C. Welford B. Gofton, clerk. Dep. £3 3s.

Glenbrien.—Classroom.—And improvements to National School. Rev. E. J. Browne, C.C., Glenbrien, Enniscorthy, Co. Wexford.

Haddington.—Additions.—And alterations at Vert Memorial Hospital. J. Douglas Miller, F.I.A.A., 5, Forres-st., Edinburgh. Dep. £2 2s.

Hampshire.—Assembly Hall.—At Coldeast Colony, Sarisbury Green; and erection of road depot hut and cottages at Winchester. A. L. Roberts, County Architect, The Castle, Winchester. Dep. £1 1s.

Hertfordshire.—Erection.—Of library at Bushey Heath, for C.C. Clerk.

Hindley.—Converting.—Infants' room and one classroom to domestic science and manual training rooms and construction of larder, vestibule, etc. at Moss-lane school, Platt Bridge, for U.D.C. O. P. Abbott, S.

***Huddersfield.**—Demolition.—Of Ramsden-st. Congregational Chapel and Old Guildhall, for C.B. H. E. Ashburner, architect, 25, Ramsden-st. Dep. £1 1s.

Inverness.—Demolition.—Of buildings, 35 to 45, Castle-st., and purchase of building materials, for T.C. B.S.

***Keswick.**—Erection.—Of 14 houses and construction of roads and sewers on Penrith-rd. housing site, for U.D.C. Clerk. Dep. £2 2s.

Manchester.—Provision.—And erection of sub-station building, Greek-st., Chorlton-on-Medlock, for T.C. Chief E. and Manager. Dep. £1 1s.

Middlesex.—Alterations.—And additions to Cardinal-rd. Council Infants' School, Feltham, for C.C. H. M. Walton, secretary, 10, Great George-st., London, S.W.1. Dep. £2 2s.

Morpeth.—Flats.—14, at Bay's Land, for T.C. J. Davison, B.S.

Penicuik.—Houses.—44, at Carlops-cres. and Cuiken-av., for T.C. Morham & Brotchie, surveyors, 29, Hanover-st., Edinburgh.

Redcar.—Exterior Painting.—Of Isolation Hospital, Redcar-ln., for North Riding (Guisborough) Combined Districts Joint Isolation Hospital Committee. G. W. Reed, clerk, Council-chambs., Guisborough.

Stretford.—Erection.—Of branch library, conveniences, etc., at Firswood, for T.C. H. T. Seward, F.R.I.B.A., 16, Princess-st., Manchester. Dep. £2 2s.

Wembley.—Carcase Wiring.—Of 96 cottages at Manor Farm, Alperton, for U.D.C. Treasurer and Accountant, 117a, High-rd. Dep. £1 1s.

Wembley.—Erection.—Of 96 cottages at Manor Farm-rd., Alperton, for U.D.C. E. and S. Dep. £3 3s.

DECEMBER 2.

Abingdon.—Erection.—Of 50 houses in Drayton-rd., for T.C. B.S. Dep. £2 2s.

Aldeburgh.—Erection.—Of eight cottages, for T.C. B.S. (East Suffolk). Dep. £1 1s.

Beckenham.—Pavilions.—At Stanhope-gr. playing field and Kelsey Park, for T.C. B.E. Dep. £2.

Bristol.—Waiting Room.—Office, etc., at Canford cemetery, Westbury-on-Trym, for T.C. City Estates Surveyor and Valuer, The Corn Exchange. Dep. £2 2s.

Chigwell.—Erection.—Of about 700 yds. lin. of chain link fencing and about 250 yds. lin. of post and barbed wire fencing at Monkhams Allotments, Buckhurst Hill, for U.D.C. G. Holbourn, E. and S. Dep. £1 1s.

Halstead.—Houses.—6, in Beridge-rd., for U.D.C W. A. Nicholson, S.

Hucknall.—Welfare Centre.—And school clinic in Watnall-rd., for U.D.C. H. M. Aitchison, S. Dep. £5 5s.

Kearsley.—Additions.—And alterations to Council offices, Bolton-rd., for U.D.C. Ormrod, Pomeroy & Foy, architects, 21, Acresfield, Bolton. Dep. £2.

***Leyton.**—Conversion.—Of rooms in Infants' Departments at various schools into nursery classrooms, for T.C. J. H. Jacques, F.R.I.B.A., 61, West Ham-lane, E.15. Dep. £1.

Manchester.—Erection.—Of 120 houses at Mitchell-st., Newton Heath, for T.C. T.C. Dep. £2 2s.

***Manchester.**—Conversion.—Of premises in Princess-st. and Portland-st., to form employment exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Penryn. — Residence. — Alfred J. Cornelius, F.R.I.B.A., architect, Truro.

Newport (I.W.).—Store.—At Depot, The Quay, for T.C. G. A. M. Gentry, B.S.

Stoke-on-Trent.—Repairs.—To house in Fenton, for T.C. Chief Sanitary Inspector, St. Peter's-chams., Glebe-st.

Sutton and Cheam.—Ambulance Garage.—And female lavatory accommodation adjoining public baths, Throwley-rd., Sutton, for T.C. N. H. Michell, B.E. and S., Municipal Offices, High-st., Sutton. Dep. £1 1s.

Swansea.—Extension.—Of existing heating and hot water installations at gymnasium and handicraft rooms, Training College, for E.C. Borough Architect. Dep. £2.

***Thirsk.**—Erection.—Of 44 houses at Sowerby, for R.D.C. C. W. C. Needham, F.R.I.B.A., 3, Duncombe-place, York. Dep. £2 2s.

DECEMBER 3.

Colwyn Bay.—Extensions.—To cafe at Eirias Park, for T.C. W. J. Dunning, E. and S.

***East Suffolk.**—Enlargement.—Of Council school at Carlton Colville, for C.C. County Architect, Ipswich. Dep. £2 2s

***East Suffolk.**—Erection.—Of new area Council school at Needham Market, for C.C. County Architect, Ipswich. Dep. £2 2s.

Hornchurch.—Convenience.—At Upminster Recreation Ground, for U.D.C. F. Alderson, S. Dep. [illegible]

Kildare.—Schools.—At Presentation Convent. A. Edward Smith, F.S.I., Quantity S., 19, Upper Merrion-st., Dublin. Dep. £1 1s.

London.—Alterations.—And additions to isolation hospital, South Ealing, for Chiswick and Ealing Hospital Committee. B.E. and S. Dep. £5 5s.

DECEMBER 4.

***Cardiff.**—Alterations.—To head post office, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Chigwell.—Cottages.—4, at Depot, Old Station-rd., Loughton, for U.D.C. G. Holbourn, E. and S., Council Offices, Old Station-rd., Loughton. Dep. £2 2s.

Farnham Royal.—Boundary Walls.—And other contingent works at Imperial College of Entomology, for Bucks C.C. Divisional S., Abbeyfield, Windsor-rd., Slough.

***Kent.**—Erection.—Admission hospital and two convalescent villas at County Mental Hospital, Maidstone, for C.C. W. H. Robinson, F.R.I.B.A., Springfield. Dep. £5 5s.

***Slough.**—Supply.—And erection of unclimbable wrought-iron fencing and gates, Manor Park housing estate, for U.D.C. E. and S.

***Slough.**—Erection.—Of 4 cottages for aged persons, for U.D.C. E. and S.

***Slough.**—Erection.—Of central public convenience, for U.D.C. E. and S.

DECEMBER 5.

Cannock.—Houses.—32, at Longford-rd., for U.D.C. S. Harrison, L.R.I.B.A., architect. Dep. £2 2s.

Chatham.—Houses.—80, at Post Barn, 2, at Palmerston-rd., 1, at Holcombe-rd., and 6, at Hardstown, for T.C. R. L. Honey, B.E. and S. Dep £2 2s.

Dublin.—Wing.—At General Headquarters, Department of Defence, Infirmary-rd., for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1.

***Gosport.**—Erection.—Of classroom and additional latrine accommodation at Lee-on-Solent school, for T.C. T.C. Dep. £1 1s.

Reading.—Foreman's Cottage.—And highways office in Norcot-rd., Tilehurst, for T.C. B.S. Dep. £1 1s.

Tynemouth.—Conversion.—Of 6 self-contained houses into flats in Telford-st., East Howdon, for T.C. John L. Beckett, B.E., 19-20, Howard-st., North Shields. Dep. £1 1s.

DECEMBER 6

Ealing.—Houses.—118, and 4 blocks of 4 flats, in connection with Cow-la. and Hicks-av. housing scheme, for T.C. F. J. Forty, B.E. Dep. £5.

Long Eaton.—Cloakrooms.—At secondary school, for Derbyshire E.C. George H. Widdows, County Architect, County Offices, Derby. Dep. £2 2s.

Malton.—Houses.—16 A3 type and 4 A4 type in various townships, for R.D.C. Martin Jackson, P.A.S.I., Syndale-rd., Normanton. Dep. £2 2s.

DECEMBER 7.

***Leicester.** — Houses. — 307, Northfield House estate, for T.C. J. S. Fyfe, A.R.I.B.A. Dep. £1 1s.

Long Eaton.—Houses.—12, in Towle-st. and Arnold-av., Old Sawley, for U.D.C. H. Raven, S. Dep. £5 5s.

Oldbury.—Houses.—60, on Bleakhouse estate, for T.C. B.S. Dep £2 2s.

DECEMBER 9.

***Birmingham.**—External.—And internal painting at post office stores, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Docking.—Houses.—6, at Sedgeford, for R.D.C. J. H. Marshall, clerk. Dep. £1 1s.

Sutton.—Erection.—Of 36 flats in Sydney-rd., for T.C. B.E. and S. Dep. £1 1s.

Wolverhampton.—Laying-out.—And construction of runway extension to airport to be constructed at Barnhurst, for T.C. H. B. Robinson, B.E. and S. Dep. £2 2s.

Wolverhampton.—Laying-out.—And construction of airport at Barnhurst, for T.C. H. B. Robinson, B.E. and S. Dep. £5 5s.

DECEMBER 10.

Essex.—Schools.—1, at Gt. Burstead and 1, at Rayleigh, for C.C. J. Stuart, F.R.I.B.A., County Architect, County Hall, Chelmsford. Dep. £2 2s. each contract.

Portsmouth.—Cycle Stores.—For Guildhall staff on two sites adjoining Guildhall, for T.C. City Architect. Dep. £1 1s.

***Staffordshire.**—Erection.—Of Wednesbury telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep £1.

Walsall.—Erection.—Of new homes to accommodate 400 inmates, together with workshop, piggeries and additions to nurses' home and school. H. W. Shipley, architect, Kingscourt, Bridge-st. Dep. £5 5s.

White Abbey.—Additional Buildings.—And alterations to old buildings at Municipal Sanatorium, for Belfast Tuberculosis Committee. R. H. Gibson & J. MacGeagh, architects, 11, Chichester-st., Belfast. Dep. £5 5s.

DECEMBER 11.

***Hendon.**—Conversion.—Of Clitterhouse farmhouse and buildings, Claremont-rd., N.W.2, into 2 flats and dressing rooms, etc., for B.C. B.E. and S. Dep. £4 4s.

***Portsmouth.**—Erection.—Of employment exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Shipley.—School.—At Wrose-rd., Wrose, for E.C. H. Dawson, S. and Architect.

DECEMBER 12.

***Chester.**—Erection.—Of senior schools at Rudheath, nr. Northwich, for C.C. F. Anstead Browne, F.R.I.B.A. Dep. £2 2s.

***Swanage.**—Erection.—Of telephone exchange, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

DECEMBER 13.

***Durham.**—Alterations.—And additions to Bishop Auckland girls' school, for C.C. F. Willey, F.R.I.B.A.

DECEMBER 16.

***Epsom.**—Construction.—Of lodge, convenience and extension to existing convenience, etc., at cemetery, for U.D.C. E. and S. Dep. £1 1s.

***Ilford.**—Erection.—Of school at junction of Aldborough-rd. and Eastern-ave., Newbury Park, for E.C. L. E. J. Reynolds, architect. Dep. £5 5s.

DECEMBER 17.

Southampton.—Sports Centre.—At Bassett, for T.C. B.E. Dep. £3 3s.

Widnes.—Erection.—Of 156 dwelling houses on Lugsdale-rd rehousing estate, for T.C. James Holt, B.E. Dep. £2 2s.

DECEMBER 19.

***London.**—Extension.—To West Norwood library, for Lambeth B.C. B.E., Brixton Hill, S.W.2. Dep. £2 2s.

NO DATE.

Dollar.—Houses.—12 at Argyle-st. and Sorely's Brae, for T.C. T. Frame & Son, architects, 43, Mill-st., Alloa.

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MATERIALS, etc.

NOVEMBER 25.

Belfast.—Iron Castings.—For Harbour Commissioners. M. J. Watkins, secretary.

Ryde.—Portland Cement.—For T.C. B.S., 5, Lind-st., Ryde, I.W.

Sheerness.—Highway Materials.—For U.D.C. W. D. Oliver, S.

Sully, near Cardiff.—Supply.—Of approx. 312 bedside lockers for Sully tuberculosis hospital, for King Edward VII Welsh National Memorial Association. F. J. Alban, secretary, Cardiff. Dep. £3 3s.

NOVEMBER 27.

Kidsgrove.—Cement.—And sundries, for U.D.C. F. C. Crimes, S.

Slough.—Pipes.—For U.D.C. Water E.

NOVEMBER 28.

Birmingham.—Blue Pennant Kerb.—For T.C. H. J. Manzoni, E.

Rhyl.—Granite Kerb.—For U.D.C. A. E. Edwards, Clerk.

DECEMBER 2.

East Sussex.—Road Materials.—For C.C. C.S., County Hall, Lewes.

Frome.—Limestone.—For R.D.C. S.

DECEMBER 3.

Hampton.—Granite Kerb.—For U.D.C. Sidney H. Chambers, S., Public Offices.

DECEMBER 6.

Montgomery.—Broken Granite.—For C.C. W. Owen Jones, C.S., County Offices, Welshpool.

ENGINEERING, IRON AND STEEL.

NOVEMBER 25.

Chelmsford. — Structural Steelwork. — Sanitary fittings, steel casements and heating and hot-water service at proposed public health department and welfare centre, for T.C. V. J. Willis, B.E. and S.

Essex.—Widening.—Of Rush Green bridge in Urban Districts of Romford and Dagenham, for C.C. Robt. H. Buckley, C.S., Chelmsford. Dep £2 2s.

Preston.—Reconstruction.—And widening of steel girder bridge over L.M. and S. Rly. at Long-la., for T.C. B.E. Dep. £2 2s.

Scunthorpe and Frodingham.—Construction.—Of two reinforced concrete reservoirs, for U.D.C. W. Farrar, E. Dep. £2.

Swansea.—Structural Steelwork.—At central public library extensions, Alexandra-rd. Borough Architect.

NOVEMBER 26.

Sunderland.—Erection.—Of 2 two-speed electric bed lifts at municipal hospital, for T.C. B.E. Dep. £2 2s.

NOVEMBER 29.

Wolverhampton.—Reconstruction.—And lengthening of bridge under Victoria Basin Branch, near Herbert-st. goods station, for G.W. Rly., E., Paddington Station, London, W.2. Dep. £2 2s.

NOVEMBER 30.

Manchester.—Steelwork.—And wrought ironwork for erection of fire emergency bridge connecting pavilions "F" and "G" at Crumpsall Hospital, Delaunay's-rd., Crumpsall, for T.C. Medical Officer of Health (Technical Section), Sunlight House, Quay-st.

ROAD, SEWERAGE AND WATER WORKS.

NOVEMBER 25.

Billericay.—Construction.—Of 14¼ miles of sewers, for U.D.C. Willcox, Raikes & Marshall, engineers, Birmingham. Dep. £5 5s.

Bilston.—Levelling.—Of St. Chad's Estate, for T.C. A. F. B. Sidwick, B.E. Dep. £2 2s.

Brentford and Chiswick.—Construction.—Of surface water outfall sewer, River Thames to Ealing Borough Boundary, for T.C. L. A. Cooper, B.E. and S., Town Hall, Chiswick. Dep. £5 5s.

Hailsham.—Sewerage Scheme.—For R.D.C. H. W. Boardman, E. and S., Cort'andt. Dep. £5 5s.

Luton.—Construction.—Of Solway-rd. continuation, 300 yds. long, for T.C. J. W. Tomlinson, B.E. and S., 12, Upper George-st. Dep. £2 2s.

Maidens and Coombe.—Construction.—Of soil sewer at South-lane, for U.D.C. A. R. Goldthorp, E. and S.

Scarborough.—Reconstruction.—Of St. Nicholas-st., Harcourt-place and Falconers-rd., for T.C. J. Paton Watson, B. and Water E. Dep. £2 2s.

Swinton.—Making-up.—Various streets, for Swinton and Pendlebury T.C. H. Entwisle, B.E. and S.

NOVEMBER 26.

Ashington.—Construction.—Of South View, for U.D.C. R. Dodds, S. and E.

Cardiff.—Works.—In various streets, for T.C. City E.

Havant and Waterloo.—Making-up.—And draining of West-rd., King's-rd. and Warblington-rd., Emsworth, for U.D.C. W. L. Hibberd, E. Dep. £2 2s.

Lewes.—Construction.—Of 750 yds. of 9 in. and 6 in. stoneware and cast-iron sewers, with manholes, etc., for T.C. C. T. Butler, B.S. Dep. £2 2s.

Sutton Coldfield.—Widening.—And reconstruction of 1,400 yds. of dual carriageway in Eachelhurst-rd., for T.C. P. Parr, B.S. Dep. £1 1s.
Wroughton.—Reconstruction.—Of Perry's-lane, for Wilts C.C. H. S. Ganderton, C.S., County Offices, Trowbridge. Dep. £2 2s.

NOVEMBER 27.

Hornchurch.—Making-up.—Of Glebe Way and Link Way, for U.D.C. F. Alderson, S.
Larne.—Laying.—Of 224 lin. yds. of 3 in. water main in Mill Brae, and 57 lin. yds. of 3 in. water main in Albert-st., for T.C. J. M. O'Brien, clerk.
Lunesdale.—Surface Water Drains.—In Halton, for R.D.C. J. Thompson, Highway S., Council Offices, Hornby.
Slough.—Laying.—And jointing 1,100 yds. of 6 in. main, for U.D.C. Water E.
Sunderland.—Sewering.—Levelling, paving, metalling, flagging, channelling, for T.C. B.E. Dep. £2 2s.
Watford.—Laying. — Extension of sewer in Bunkers-la., Abbots Langley, for R.D.C. S., 25, King-st. Dep. £2 2s.

NOVEMBER 28.

Banstead.—Making-up.—Of Sandersfield-gdns., for U.D.C. S. Dep. £1.
Birmingham.—Paving Footways.—And provision of kerb and channel in Quinton-rd., Harborne, for T.C. H. J. Manzoni, City E. Dep. £2.
Edinburgh. — Construction. — Of fireclay pipe sewers, forming and bottoming of carriageway and footpaths of roads and supplying and laying whinstone kerbs and channels for same, for T.C. City E., 329, High-st.
Luton.—Construction.—Of concrete tube foul-water sewers, for T.C. J. W. Tomlinson, B.E. and S. Dep. £5 5s.

NOVEMBER 29.

Leicestershire.—Widening.—And reconstruction of London-Carlisle-rd., for C.C. C.S., 1, Friar-lane, Leicester. Dep. £5.
Morton.—Street Works.—In Highpath, for Merton and Morden U.D.C. R. W. North, E. and S. Dep. £1.

NOVEMBER 30.

Brierfield.—Making-up.—Streets or parts of streets, for U.D.C. Surveyor. Dep. £1.
Brierfield.—Widening.—And reconstruction of Halifax-rd., for U.D.C. W. D. Haigh, E. and S. Dep. £2 2s.
Droitwich.—Widening.—Reconstructing and surfacing carriageway and footpaths; also extension of foul-water sewer, for T.C. Robert E. Hulse, B.E. and S. Dep. £2 2s.
Seaton Valley.—Sewer.—And works in connection therewith at Foremans-row, Seaton Delaval, for U.D.C. S. Dep. £1 1s.

DECEMBER 2.

Aldershot.—Making-up.—Of two streets, for T.C. B.S. Dep. £1 1s.
Sunbury-on-Thames. — Improvement. — Of Upper Halliford-rd., for U.D.C. A. J. Buttress, Acting S. Dep. £2 2s.
Wilton.—Laying.—Of about 800 yds. of 6 in. and 380 yds. of 7 in. dia. spun-iron pipes; alterations and additions to pumping station; also construction of concrete reservoir of approx. 180,000 gallons capacity, for T.C. W. Herbert Bateman, Bath-easton, Bath. Dep. £3 3s.

DECEMBER 3.

Burnham-on-Sea.—Construction.—Of 570 yds. of 9 in. stoneware sewers, with manholes, 180 yds. of 4 in. cast-iron rising main and 610 yds. of 2 in. air main, with construction of an underground ejector station and other works, for U.D.C. W. H. Chowins, E. and S. Dep. £2.

Public Appointments.

NOVEMBER 26.

***Birmingham.**—Architectural Draughtsman (Temporary).—For E.C. Chief Education Officer.
Cheshire.—Architectural Assistant (Temporary) —For C.C. F. Anstead Browne, F.R.I.B.A., Chester.

NOVEMBER 29.

***Slough.**—Clerk of Works.—For U.D.C. Clerk.

NOVEMBER 30.

London.—Clerk of Works.—For Westminster City Council. T.C., Charing Cross-rd., W.C.2.
***London.** — Senior Architectural Assistant (Temp.).—For Finchley B.C. B.E. and S.
***St. Helens.**—Clerk of Works.—For E.C. Director of Education.

DECEMBER 2.

Scotland.—Assistant Architect.—Secretary, Dept. of Health for Scotland, Edinburgh.

DECEMBER 3.

***London.**—General Foremen.—For Poplar M.B. B.E. and S.

DECEMBER 4.

***Kent.**—4 Junior Architectural Assistants.—For C.C. W. H. Robinson, F.R.I.B.A., Springfield, Maidstone.

DECEMBER 6.

***Essex.**—Architectural Assistant (Temp.).—For C.C. J. Stuart, F.R.I.B.A., Chelmsford.

DECEMBER 7.

***Huddersfield.**—Architectural Assistant (Temp.). —For C.B. T.C.

NO DATE.

***London.**—Technical Surveyor's Assistant.—For Royal Arsenal. Chief Superintendent of Ordnance Factories, S.E.18.
***London.**—Civil Engineering and Architectural Assistants.—For Drawing Office, Admiralty. Civil Engineer-in-Chief.
***London.**—Civil Engineering Assistants (Temporary).—For Admiralty. Civil Engineer-in-Chief.

CURRENT & PROPOSED BUILDING WORK*

Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.W.B. for Metropolitan Water Board; B.S. for Borough Surveyor; B.E. for Borough Engineer; D.S. for District Surveyor; C. for Clerk; T.C. for Town Clerk; C.E. for County Engineer; C.S. for County Surveyor; S. for Surveyor; E. for Engineer.

Banbury.—New railway station to be constructed for combined G.W.R. and L.N.E.R. lines.
Barrow-on-Soar.—R.D.C. approved plans for extensions to parish church schools, Birstall, for Trustees. Pick, Everard, Keay & Gimson, F.R.I.B.A., architects, 6, Millstone-ln., Leicester.
Blackpool.—Watch Committee propose C.I.D. offices in Albert-rd.—Fairbrother, Hall & Hodges, architects, 16, Abingdon-st., for development of land for houses on Poulton Old-rd., for V. T. Heald.—Williams Deacon's Bank, Ltd., 38, Mosley-st., Manchester, shop and café in Red Bank-rd., Bispham.
Blyth.—Revised plans by B.E. to be forwarded to B. of E. for practical rooms at New Delaval school.
Bolton.—Rev. T. H. Caren, vicar, and Parochial Council of St. Paul's Church, Halliwell, propose extensions of Sunday school, at £1,400.
Bowburn.—W. Foster, builder, Houghton-le-Spring, had plans approved for 136 houses.
Bristol.—T.C. to make application to M.H. for sanction to borrow £18,215 for roads and sewers for drainage area on Knowle housing estate providing for 300 houses.
Bury.—Bury and District Co-operative Society, Ltd., Knowsley-st., propose reconstruction of central premises in Market-st. Plans by Architect's Department, Co-operative Wholesale Society, Ltd., Balloon-st., Manchester. Contracts not let.
Carlisle.—Cumberland and Westmorland Joint Hospital Board proposing admission block and sanatorium at Garland's Institution. Plans by H. E. Ayris, L.R.I.B.A., 68, Lowther-st.
Carlton.—Netherfield Co-operative Society propose 30 houses in West Dale-ln. Bright & Thoms, architects, 9, St. Peter's Church-walk, Nottingham.
Chatham.—T.C. to erect 89 houses, Post Barn, Palmerston-rd., Holcombe-rd. and Hardstown.

* See also List of Contracts open.

*** **In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

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272 CROWN STREET LIVERPOOL 7

Cheadle.—R.D.C. proposing observation block at isolation hospital. Council's Surveyor, A. P. Hancox, to prepare plans.
Chesterfield.—A. Heaton, The Bungalow, Hady Hill, propose development of land at Hady Hill. H. Taylor, architect, Holywell-chambs., Holywell-st., Chesterfield.
Conisville.—U.D.C. propose 80 additional houses.
Consett.—T. Hutton, S. to U.D.C., been instructed to go ahead with plans for 100 houses.
Coulsdon and Purley.—U.D.C considering extensions to hospital.—S. reported desirable for 50 houses in Westleigh-av., Coulsdon, being painted externally at £226. Tenders to be invited.—The Council recommend estimate prepared by S. amounting to £360 in respect of alterations and furnishing at "Langley Oaks," Selsdon.—S. to submit alternative plans and estimates for erecting pavilion and lavatory accommodation at Old Farleigh-rd. recreation ground.—S. also to report upon alternative sites, including possibility of constructing an underground convenience in centre of Addington-rd. by Selsdon Broadway.
Darlington.—E.C. considering another new elementary school in Cleveland-ter. E. Minors, B.E.—Tees Valley Water Board, Corporation-rd., Middlesbrough, to construct a weir over Tees at £2,100.
Durham.—C.C. approved in principle £9,000 scheme by C.S. for Blackhall Mill Bridge.
Ealing.—Plans passed by T.C.:—R. Lancaster & Sons, 31 houses, Medway-dr.; J. Mulcrone, Ltd., 20 houses, Middleton-av. and Downing-dr.; L. Castell (architect, W. J. Dow), 10, shops with flats over, Ruislip-rd.; Geo. Young (Floriston), Ltd., 20 flats, Long-dr., Jeymer-dr.; M. Cowen (architect, T. Davis), 7 shops with living accommodation over, Bilton-rd.; E. G. Menries (architect, H. Henden-Winder), 10 shops with flats over, Northfield-av. and Windmill-rd.
Essex.—C.C. recommend following: Enlargement of Herts and Essex high school, Bishop's Stortford, at £5,338; reconditioning of premises which formerly accommodated the County high school for boys, Ilford, at £2,212 6s.; purchase of land in Townfield-rd. as additional land for the Rochford proposed Council senior school, at £450; invite tenders for provision at Romford Institution of separate entrance, waiting-room and lavatory accommodation for visitors, etc., at £1,500; invite tenders for additional accommodation in female infirmary at Braintree institution, at £1,500; purchase of land as extension of site of Witham proposed Council senior school; sketch plans for Little Thurrock proposed junior school for 450-500, at £6,815; purchase land for proposed senior school; erection of proposed Manningtree senior school for 360-400 seniors, at £20,349; purchase site for Rochford proposed Council senior school; sketch plans for erection of West Mersea proposed Council senior school with accommodation for 200 seniors, at £9,060; sketch plans for adaptation of West Mersea Council school as junior school, at £1,026; £28,000 for bridge and viaduct over L.N.E. Rly. at Alresford; reconstruction and widening stone bridge No. 91 over Pincey Brook on Chelmsford-Sawbridgeworth-rd. (A414), at £2,500; construct new road in order to by-pass Weeley Village and existing level-crossing at Weeley station on Colchester-Clacton-rd., including construction of bridge and viaduct over L. & N.E.R., at £74,600; reconstruct Pesterford Bridge, at £20,000; construct Brentwood by-pass, at £144,000; construct Ingatestone by-pass, at £66,000; dual carriageways on London-Yarmouth-rd., section IV, Margaretting to Widford, at £58,000, and section VHIA, Kelvedon to Marks Tey, at £96,000; enlargement of 2 play rooms at Stanway children's home, at £475; renovations to Walthamstow relief station, at £215; hospital for children of 250 beds with provision for further accommodation to be erected, if possible, in the vicinity of Oldchurch Hospital; new hospital of ultimately 500 beds to serve the needs of the Barking-Dagenham area; purchase ground at Abbe Cross, Hornchurch, for combined treatment centre purposes; installation of electric lighting in infirmary and administrative blocks, at £338; heating of Infirmary, at £182 15s., at Braintree Institute; external fire escape staircase, rebuilding a chimney stack, at £173 10s., at Braintree children's home; and painting and renovations to Harold Wood hall, at £209.
Eaton.—£6,250 scheme for library been submitted for approval of North Riding E.C. County Architect, J. White, Northallerton.
Gravesend.—T.C. approved: Prices, Tailors, Ltd., reconstruction of 13 and 14, New-rd. as shop and office premises for themselves.
Hambledon.—Surrey P.A.C. to provide additional accommodation at Institution, at £5,630.
Hazel Grove and Bramhall.—G. S. Doncaster, S., been instructed to prepare plans and obtain tenders for conversion of Torkington Lodge into Council Offices.
Hebburn-on-Tyne.—St. John Ambulance Brigade to erect drill hall in Victoria-rd., West. Plans by Newcombe & Newcombe, 23, Eldon-sq., Newcastle-on-Tyne. No contracts let.—Sanction received by U.D.C. to borrow £7,686 for land in Victoria-rd., West, for further houses.
Hegsthorpe.—E.C. proposing elementary school. Plans by County Architect, Philip W. Birkett A.R.I.B.A., Lincoln. Permanent building for 2[illegible] junior chil[illegible]

Holywell.—U.D.C. propose 118 houses, Bryn Mawr site. Plans by D. L. Morgans, architect and surveyor, Town Hall.

Hove.—T.C. approved widening Hangleton-rd from west of Dyke railway bridge to Nevill-rd. through West Blatchington, at £22,000.

Huddersfield.—Prices Tailors (1928), Ltd., Cardigan Clothing Works, Lennox-rd., Armley, Leeds, propose four-story building corner of Cloth Hall-st. and New-st.

Keighley.—T.C. approved plans for 63 houses, H. Rishworth, Aireworth-rd.

Kirkham.—Fylde Joint Hospital Committee proposing extensions to Isolation Hospital, Moss Side. F. Harrison, architect, 30, Willows-st., Accrington. Contracts not let.

Leyland.—U.D.C. approved centralisation of new Council buildings, including fire station, mortuary, ambulance station, six cottages, and a car park. Cost, £20,753. Plans by M. H. Wilkinson, S.

Lancashire.—C.C. Highways and Bridges Committee propose reconstruction and improvements of Green Man Canal bridge, Preston-Lancaster road, Myerscough, £20,600; Cherry Tree railway bridge, Chorley-Blackpool road, at £4,550; Skew railway bridge, Chorley-Bolton road, Heath Charnock, at £5,500; Central Station railway bridge, Atherton, at £5,650; Moorside and Wardley railway bridge, Swinton, at £2,913. Plans by P. Schofield, County Surveyor and Bridgemaster, Preston.

Leamington.—T.C. instructed to apply to M.H. for sanction to borrow £16,460 for erection of 52 houses on Shrubland estate, for T.C

Lichfield.—City S. prepared plans for 40 additional houses in Curborough-rd.

Liskeard.—R.D.C. authorised erection of 56 more houses in district.

London (Bermondsey).—L.C.C. sanctioned borrowing by B.C. of £33,011 for Upper Grange-rd. and Fort-rd. housing schemes.

London (Bloomsbury).—L.C.C. made grant of £30,000 to Court of University of London in connection with development of site.

London (Fulham).—L.C.C. sanctioned borrowing by B.C. of £17,250 for Margravine-rd. housing scheme.

London (Greenwich).—B.C. approved:—Office building at 139, Greenwich-rd.; houses, rear of 26, St. John's-pk., next to Langton-way.

London (Norwood).—L.C.C. recommend application of Bakstanski & Poore for workshop extension on site approached from Pilgrim-hill and Aucklandhill.

London (Wandsworth).—B.C. approved:—Ward & Paterson, Ltd., pavilion at the Bank of England sports ground, Priory-ln.; F. A. Hedges, 23 lock-up garages, rear of 35, West-hill; Kilby & Gayford, Ltd., alterations to 63, High-st., Putney.—B.C. recommend conveniences on Wandsworth Common on west side and north side.

London (Westminster).—City Council approved application by Yates, Cook & Darbyshire for one-story bridge over Wilson-st., for Odhams Press, Ltd.—City Council approved architect's revised plans for provision of separate bathrooms in four-room flats of block 1, Ebury Bridge housing estate extension, at additional estimated cost of £154 10s.

London (Woolwich).—L.C.C. sanctioned borrowing by B.C. of £5,050 for Timbercroft-ln. housing scheme and £8,318 for roads and sewers on Middle Park estate.

Longton (Staffs).—Board of directors of Longton Cottage Hospital proposing improvements to kitchens and extension for nursing staff. Wood & Goldstraw, architects, Tunstall, Stoke-on-Trent.

Lowestoft.—T.C. approved: 9 lock-up shops, corner of London-rd. South and Carlton-rd., for T. Porter.

Manchester.—Fred Thorpe, F.R.I.B.A., Union Bank-bldgs., Oldham, preparing plans for alterations to existing Sunday Schools, for Parochial Council of St. Stephen's Church, Chorlton-on-Medlock. Contracts not let.—Howard & Clarke, 61, Hyde-road, Gorton, propose 52 houses, Howard-rd. and Clark-av., Gorton.—E.C. propose senior school at Brownley Green, Wythenshawe. Plans prepared in Architects' Department.—P.A.C. to erect offices in Collyhurst and Wythenshawe at £16,000. G. Noel Hill, A.R.I.B.A., City Architect.—Community Centre Building Committee propose assembly hall, Royal Oak estate.—T.C. approved p'ans for widening to 50 ft. L.M.S. Railway bridge at Wilton-rd., Crumpsall.

Market Drayton.—Wood & Goldstraw, A.R.I.B.A., architects, Town Hall, Tunstall, Stoke-on-Trent, prepared plans for sanatorium and laundry block at Burntwood Sanatorium, for Cheshire Joint Sanatorium Committee, St. John's House, Chester.

Middleton.—T.C. propose 124 houses off Baytree-lane. Plans by J. Pollard, L.R.I.B.A., Borough Architect.—L. G. Mouchel & Partners, engineers, 38, Victoria-st., S.W.1, appointed for reinforced concrete work in connection with proposed new baths. Plans by Borough Architect. Cost, £40,000.

Northfield.—Ten Acres and Stirchley Co-operative Society, Ltd., proposing stores. Plans by H. W. Simister, architect, Norwich Union-chambs., Congreve-st., Birmingham.

Oswaldtwistle.—Lancaster, Son & Parkinson, architects, Imperial-chambs., 2, Grimshaw-st., Burnley, preparing lay-out plans for development of Peel Fold estate.

Portsmouth.—As memorial to George A. Stocks, 14 stalls to be erected at Cathedral at £2,000.

Preston.—J. Sutcliffe, builder, 22, Windsor-av., New Longton, propose 100 houses, Royalty-ln., New Longton.

Rawtenstall.—Guardians Committee and P.A.C. of Lancashire C.C. propose extensions at Moorlands Institution. Plans prepared by Stephen Wilkinson, F.R.I.B.A., County Architect, Preston.

Rowley Regis.—L. G. Taylor, B.S., to prepare plans for municipal buildings, for T.C.

Rugby.—J. H. & R. B. Lyddington, architects 11, Regent-st., prepared plans for development of Rainsbrook and Gorse House estate, for housing.

St. Ives (Hunts).—Police quarters to be reconstructed at £3,000.

Salop.—C.C. propose reconstruction of London to Holyhead-rd. (part), at £51,300.—C.C. propose reconstruction of Montford Bridge, at £12,000.

Sandown and Shanklin (I.O.W.).—U.D.C. proposes to build central offices at Lake.

Sheffield.—T.C. approved plans for 248 houses, Shirecliffe estate, scheme No. 1, for Estates Committee.—Rev. T. Benton and Catholic Authorities proposing memorial schools on Wyburn estate, to be known as "Canon Dolan" schools. Cost £17,000. Plans by Empsall, Clarkson & Clarke, F.R.I.B.A., architects, 18, North Park-rd., Manningham, Bradford.—W. G. Gibbs, 22, Paradise-sq., architect for 280 houses on land adjoining Chapel Town-pk., Chapeltown.—T.C. proposes to develop land, Fox Hill-rd., Herries-rd., Southey Green-rd., Elm-ln., etc.—Plans approved by T.C.:—2 houses, off Ridge Hill-av. and Alnwick-rd., for Hallewell Estates; factory, garage, shop and house, Middlewood-rd., Willis & Vera, 78, Manners-st.

Shipley.—U.D.C. approved plans for 76 houses, Dale & Wild, Graisby-ln.; 20 houses, A. Greenwood, Holland-ln.; 500 houses, Victoria Park and Springwood estate, H. Chippendale, Bar Grange-av.

Stafford.—W. Whittingham, builder, Park House estate, proposes 30 houses, Eastlands estate.

Stanley.—U.D.C. proposes another 250 houses to plans by A. Routledge, S.

Stockport.—T.C. has approved plans for 780 houses, Bridge Hall Farm estate. W. L. Gardner, B.S.—Pennington Bros., builders, Offerton-rd., Torkington, propose development of Torkington estate by 40 houses. Plans by own staff.—Baths Committee propose public baths, Portwood, Cheadle Heath and Heaviley districts.—T.C. propose adaptation of premises in Gladstone-st., Great Moor, for branch library.—T.C. propose extensions to Town Hall.—E.C. propose erecting elementary school at Heaton Mersey. Plans in Architects' Dept., Education Offices, St. Petersgate, L. Yates, Town Hall, Chief Architect.

Stoke Poges.—Messrs. Harman's, Uxbridge, Brewery to rebuild "Rose and Crown."

Stoke-on-Trent.—E.C. propose secondary school to accommodate 500 boys at Hanley. Plans by Chief Architect.

Stockton-on-Tees.—Percy L. Browne & Sons, Pearl-bldgs., Northumberland-st., Newcastle-on-Tyne, architects for slaughter-house and factory for A. Lewis, 157, High-st. No contracts let.—Workshop to be erected near St. John's-crossing by Imeson & Finch, Ltd., Empress Works. Plans by the firm's own architect. No contracts placed.

Stretford.—T.C. approved:—Scheme submitted by P. Howard, architect, for house and office accommodation at cemetery, at £1,173.—New employment exchange to be erected in Brunswick-st.—Plans passed:—Turbine experimental test room, extension, machine tool dept., and varnishing shop at Westinghouse-rd., Metropolitan-Vickers Electrical Co., Ltd.; warehouse and flour mill, Skerton-rd., British Arkady Co., Ltd.

Sunderland.—T.C. proposes to carry out three sewage schemes at £87,500. Schemes apply to reconstruction of Pallion-rd. sewer at £41,000, new intercepting sewer at Southwick at £32,000, and new sewer as extension of present Hendon Burn sewer at £14,500. J. E. Lewis, B.E.

Sutton-on-Sea.—F. A. Roberts, builder, New-st., Matlock, proposes development of Victoria estate for houses.

Swinton and Pendlebury.—P. Thomas, F.R.I.B.A., 6, St. John's-sq., Cardiff, and E. Prestwich, F.R.I.B.A., Bradshawgate-chams., Leigh, joint architects, prepared detailed plans for town hall on Swinton Civic Centre. Cost £70,000. Quantities prepared by H. C. Haworth, 9, Wood-st., Bolton.

Thornaby-on-Tees.—T.C. to proceed with swimming baths to cost £15,000. Plans by B.E.

Walsall.—T.C. received sanction to borrow £132,661 for housing.—T.C. propose public conveniences, Digbeth, Lower Hall-lane and Adamsrow.

Whitby.—U.D.C. confirmed report of Harbour Committee regarding jetty at dock end. Preliminary plans prepared by C. E. B. Conicher, resident engineer for Council.

Willington.—U.D.C. to apply to M.H. for sanction to erect another 150 houses.

Wirksworth.—U.D.C. propose 30 houses, Wash Green. Plans by C. Frobisher, S.

Wood Green.—T.C. approved: E. C. Davies (for Alexandra Palace Trustees), alterations to south-west side of Alexandra Palace.

Wolverhampton.—Arnold Silverstone & Co., 118, New-st., Birmingham, preparing plans for development of Bhylls Farm estate, Lower Penn, for houses.

Wombourne (Staffs).—Joynson Bros., architects, F. & L.R.I.B.A., Lower High-st., Wednesbury, preparing plans for development of land at Buttons Farm estate for housing estate.

Workington.—J. Leslie & Sons, builders, Coach-rd., Whitehaven, propose laying out land at Laverock Hall and Moor Close for housing estate.—T.C. received sanction to borrow £2,127 for extensions of maternity and child welfare centre.

Worsborough.—U.D.C. propose town hall. Plans to be prepared by T. Shield, S.

Worthing.—T.C. has approved scheme for improvement of pier at £9,250.—T.C. approved—152 houses, east of Onashetts footpath and King Edward-av. and Westbourne-av. S. W. Phillips & Co.

LONDON BUILDING ACT

EXPENSES OF DEMOLITION.

UNDER this heading we noted in our issue for April 19 last the case of London County Council *v.* Harling Street (Owners). This case has, after a long interval, been reported in the "Law Reports" for October (1935, 2 K.B. 322).

It will be remembered that notices had been given to the owners of certain premises under section 132 of the London Building Act, 1930, calling upon them to take down the buildings as they were in a dangerous condition. As, after application had been made under section 140, subsection (1), to a Metropolitan Police Magistrate for an order requiring the owners to comply with the notices which had been granted, the owners still did not comply, the County Council undertook the work themselves—employing contractors to do it for them. For this purpose they engaged a well-known firm of contractors under a contract which was described by the Court as a kind of running or general contract providing for the doing of such building work as the Council should from time to time require to be done. The work, which was the subject matter of this dispute, was not primarily demolition work, as it related to the removal of the material from the site, and the contractors had employed a sub-contractor to perform this part of the work. The Council were seeking to recover the expenses thus incurred, and the magistrate who heard the application, under section 41 of the Act, had made certain deductions from the sums claimed on the ground that the material could have been sold on the site.

In our former article we explained the grounds upon which the Divisional Court, on appeal, held that the magistrate had jurisdiction to make this order and dismissed the appeal, but from the report now available two other points may be noted. Firstly, during the proceedings some point appears to have been made that the contract with the contractors was not a reasonable contract as, had a firm of demolition contractors been employed, the debris and material could have been sold on the premises, and expense have thus been saved, but the Divisional Court held that as the work was not simply demolition work the non-employment of demolition contractors was not of importance.

The second point arose out of the contract entered into between the Council and the main contractors. That contract provided that as regards any old metals ordered to be removed off the site, the contractor should give credit for them at the market value current at the date of removal, subject to the deduction of a certain percentage (clause 18), and clause 19 provided that the contractor should after completion within a certain number of days, make out and deliver to the architect an account for the works, and things executed, and labour provided under this contract, and should state the sums, if any, to be credited by the contractor to the Council for old materials removed. It was argued that, when the architect in this case had certified the amount payable, that amount became "expenses" within section 141, subsection (1), and that there could be no further inquiry, but the Divisional Court held that although the certificate might be conclusive and binding as between the Council and the contractor, and although the Council in fact had paid the amount as certified by the architect, yet under section 141, subsection (1), it was open to the magistrate to intervene as between the Council who were making the claim and the owner of the premises who was being called upon to pay, and the Court cited a passage from the judgment of Lord Justice Brett in the case Reg. *v.* London County Council (1882, 10 Q.B.D., at page 326).

The distinction between this case and a building contract appears obvious, as in the case of building contracts the contractor is party to the contract, and is bound by its terms, whilst here the owner of the premises was a stranger to the contract.

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry.

BRICKS, &c.

Per 1,000 Alongside in River Thames up to Mortlake.

	£ s. d.
Best Stocks	4 2 0
Second Hand Stocks	3 10 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
"Phorpres"	*2 8 3	Flettons, B'll'n'se.	3 6 3
Flettons at King's Cross	*2 8 3	Best blue Pressed Staffs.	8 5 0
Do., grooved for Plaster	*2 10 3	Do. Bullnose	8 15 0
		Blue Wire Cuts	7 0 0
White Midhurst Facing Bricks (delivered London site)			5 0 0
"Phorpres" Whites (King's Cross)			*3 11 3
"Phorpres" Rustic Facings (King's Cross)			*3 6 3

Best Stourbridge Fire Brick :—
2½ in. ..... 7 15 0 3 in. 8 15 0
*Delivered to site in W.C. district, 6s. extra per 1,000.

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	21 0 0	Db'le Str'tch'rs	29 10 0
		D'ble Headers	26 10 0
		One side and two Ends	30 10 0
Headers	20 10 0	Two sides and one End	31 10 0
Quoins, Bull-nose and 4½in. Flats	27 10 0	Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

CLINKER CONCRETE.

2" per yd. sup	1 6	3" per yd. sup.	2 0
2½ " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½ " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" x 4"	3 9

Per yard super d/d.	Free on site, London. s. d.	
Thames Ballast	7	3 per yd.
Pit Ballast	6	3 " "
Pit Sand	7	9 " "
Washed Sand	8	3 " "
¾ in. Shingle	7	3 " "
¾ in. Broken Brick	11	3 " "
Tan Breeze	8	3 " "

delivered 2 miles radius Paddington.

CEMENT.

Best British Portland Cement, Standard Specification, delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable) :—

	£ s. d.
4 ton loads and upwards site.....Per ton	2 0 0
1 ton to 4 tons site	2 2 0
Alongside Vauxhall in 80-ton lots	1 16 0
"Ferrocrete" Rapid Hardening Cement :—	
4 ton loads and upwards site	2 6 0
1 ton to 4 tons site	2 8 0
Alongside Vauxhall in 80-ton lots	2 2 0

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett, if returned in good condition withiu three months, carriage paid.

"Colorcrete" Nos. 1 and 2 Coloured Rapid Hardening Portland Cement in 1-cwt. paper bags free (non-returnable) in 1-ton lots and upwards site	2 6 0
"Snowcrete" White Portland Cement in 1-cwt. paper bags free (non-returnable) 1 ton and upwards site	8 15 0
Super Cement (Waterproof) paper bags free	3 10 0
Roman Cement	6 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	2 17 0	Stripate, Coarse	3 5 0
" White	3 2 6	" Finish	3 13 0
Super Carbo	2 7 6	4-ton loads & over London Area, paper bags free.	
Carbo Setting	2 12 6		
Best Ground Blue Lias Lime	1 17 6	Grey Stone Lime	2 2 0
		Chalk Lime	2 2 0
GraniteChippings	1 12 0	Hair per cwt.	2 2 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months carr. pd.

Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dep.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
BEER STONE—RANDOM BLOCK—	
Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra ; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do., delivered on road waggons at above stations, per ft. cube	4 5½
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30ft.	
HOPTON-WOOD STONE—	
F.O.R. Quarries, Wirksworth Derbyshire.	s. d.
Random blocks from 10ft. and over P. ft. cb	14 0
Sawn two sides	22 6
Sawn three or four sides	27 9
CHILMARK—RANDOM BLOCK—	
At Nine Elms, per ft. cube	3 11
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	
6in. sawn two sides landings to sizes (under 30 ft. super) ..... Per ft. super	5 6
6in. rubbed two sides, ditto ..... "	6 0
3in. sawn two sides slabs (random sizes) "	2 3½
2in. to 2½in. sawn one side slabs (random sizes) "	1 6½
1½in. to 2in., ditto ..... "	1 3½
HARD YORK—	
Delivered at any Goods Station, London.	
Scappled random blocks ....Per ft. cube	6 3
6-in. sawn two sides landing to sizes (under 40 ft. super) .....Per ft. super	5 1½
6in. rubbed two sides, ditto ..... "	6 1½
4in. sawn two sides slabs (random sizes) "	3 1½
3in. ditto ditto "	2 8
2in. self-faced random flags..Per yd. super	7 6

CAST STONE.

Delivered in London area in full van loads, per ft. cube : Plain, 6s. 6d. ; Moulded, 9s. 6d. Silla, 10s. 0d.

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 × 11	£23 10	3 × 6	£18 10
4 × 9	22 10	3 × 11	19 10
4 × 8	21 0	2 × 11	19 10
4 × 7	19 0	3 × 9	19 10
3 × 8	17 10	2½ × 9	19 10
3 × 7	18 0	3 × 4½	17 10
2½ × 7	18 0	3 × 4	17 10

PLANED BOARDS.

1 × 11	£22 10	1 × 9	£21 0

PLAIN EDGE FLOORING.

Inches	per sq.	Inches.	per sq.
⅝	16/-	1¼	25/-
¾	17/-	1½	31/6
1	19/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.
1	21/-
1¼	26/-
1½	32/6

ins. BATTENS	s. d.
¾ × 2..per 100ft.	2 6

MATCHING (BEST)

Inches.	per sq.
⅝	16/-
¾	18/6
1	22/6

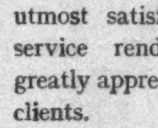
SAWN LATHS.	s. d.
Per bundle	2 3

HARD WOOD.

1 INCH AND UP THICK.

	£ s. d.
Average price for prime quality.	
Dry Austrian Wainscot, per ft. cube	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube.	0 14 0
Dry American Whitewood, per ft. cube	0 10 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt.	4 7 0 to 5 10 0

HUDDERSFIELD Building Society



Experience has shown that the arrangements made by the Huddersfield to assist occupier borrowers have given the utmost satisfaction, and the service rendered has been greatly appreciated by builders' clients.

Write for the Folder "Mortgage Facilities" to The Huddersfield Building Society, Britannia House, 203, Strand, London, W.C.2., or to the Head Office, Britannia Buildings, Huddersfield. Andrew Stewart, C.A., Managing Director.

WHEN YOU INVEST—A HOUSE IS BEST!

SLATES.

First quality slates from Bangor or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	29 15 0	18 by 10	15 12 6
22 by 12	25 0 0	18 by 9	13 15 0
22 by 11	22 10 0	16 by 10	13 10 0
20 by 12	22 0 0	16 by 8	10 7 6
20 by 10	19 7 6		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	£4 2 6
ditto hand-made ditto	4 10 0
Ornamental ditto	4 15 0
Hip and valley tiles (per dozen) } Hand-made	0 8 6
Machine-made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted	£11 10 0
Plain Compound Girders	13 10 0
" Stanchions	16 0 0
In Roof Work	18 10 0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter	£ s. d.	Diameter	£ s. d.
½ in.	12 0 0	⅝ in. to ½ in.	10 15 0
⅜ in.	11 0 0	⅞in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward. If sent from London Stocks)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛in. to 6in. %	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ⅛in. to 6in. %	Standard Fittings Sizes ⅛in. to 6in. %	Standard Flanges Sizes ⅛in. to 6in. %
Gas	65	52½	57½	70
Water	61½	48½	52½	65
Steam	57½	45	47½	60
Galv.gas.	52½	40	47½	60
Galv.water	47½	35	42½	55
Galv.steam	42½	30	37½	50

C.I. HALF-ROUND GUTTERS—London Price ex Works.

Per yd. in 6ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/5½	1/1½	4½d.
3½ in.	1/6½	1/3	5½d.
4 in.	1/6½	1/4½	6½d.
4½ in.	1/8	1/6½	9½d.
5 in.	1/10½	1/8½	10d.

O.G. GUTTERS.

3 in.	1/7½	1/5½	7d.
3½ in.	1/9½	1/5½	7½d.
4 in.	1/11	1/6½	8½d.
4½in.	2/0	1/9½	9½d.
5 in.	2/4½	2/0½	11½d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe,	Bends, stock Branches, angles, stock angles.
2 in.	2/2½	1/4½ 2/0
2½ in.	2/3½	1/6½ 2/4½
3 in.	2/9½	1/11 2/10½
3½ in.	3/3½	2/3½ 3/3½
4 in.	3/9	2/9 4/0½

Less 20 per cent. trade discount.
Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Stock.

	Pipe,	Bends, stock Branches, angles, stock angles.	
	s. d.	s. d.	s. d.
2in. per yd. in 6 fts.	2 9½	2 0	2 5½
2½in. " ..	3 2	2 2½	3 0½
3 in. " ..	3 6	2 5½	3 7½
3½ in. " ..	3 9½	3 0½	4 2½
4 in. " ..	4 2½	3 4½	4 10½

L.C.C. COATED DRAIN PIPES—London Prices ex Stock.

	Pipe,	Bends, stock Branches, angles, stock angles.	
	s. d.	s. d.	s. d.
3in. per yd. in. 9ft. lengths	3 4½	4 3	7 0
cwt. qr. lbs.			
4in. " 1 1 20..	5 1	5 0	8 9
5in. " 1 2 22..	6 6	8 9	13 6
6in. " 2 0 6..	7 6	10 3	18 0

Gaskin for jointing 41/- per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common bars	10 0 0	to	10 10 0
Staffordshire Crown Bars—			
Good merchant quality	10 10 0	to	11 0 0
Staffordshire Marked Bars	14 0 0	..	15 0 0
Mild Steel Bars	9 0 0	..	10 0 0
Steel Bars, Ferro-Concrete quality, basis price	8 10 0	..	9 0 0
Hoop iron, basis price	11 0 0	..	12 0 0
" Galvanised	27 10 0	..	28 10 0

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(*contd.*).

IRON— Per ton in London.

	£ s. d.	£ s. d.
Soft Steel Sheets, Black—		
Ordinary sizes, to 20 g.	11 0 0 ..	11 10 0
,, ,, 24 g.	12 0 0 ..	13 0 0
,, ,, 26 g.	14 0 0 ..	15 0 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality—		
Ordinary sizes, 6 ft. by 2 ft. to 8 ft. to 22 g. ad 24 g.	15 0 0 ..	16 0 0
Ordinary sizes, 6 ft. by 2 ft. to 8 ft. to 26 g.....	17 10 0 ..	18 10 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	13 10 0 ..	15 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g...	15 10 0 ..	16 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	16 10 0 ..	18 0 0
Sheets, Galvanised, Flat, Best quality—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 8 ft. to 20 g. and thicker	14 10 0 ..	16 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	15 0 0 ..	17 0 0
Best Soft Steel Sheets, 26 g.	16 10 0 ..	18 0 0
Cut Nails, 3 in. to 6 in.....	15 10 0 ..	17 0 0
(Under 3 in. usual trade extras.)		

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	0 9
Strong sheet	,,	0 10
Thin	,,	0 11
Copper nails	,,	1 0
Copper wire	,,	0 11

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	200/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/-	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	20/-	36/-	63/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	102/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH GLASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.
6 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- per doz.

TIN.—English Ingots, 2/6 per lb. SOLDER.—Plumbers' 1/1½ Tinmen's 1/3, Blowpipe 1/4 per lb.

LEAD, &c.

(Delivered in London.)	£ s. d
LEAD.—Sheet, English, 4 lb. and up.....	25 10 0
Pipe in coils	25 10 0
Soil pipe	30 15 0
Compo pipe	31 15 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra, and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton } £16 10 0

PAINTS, &c.

		£ s. d.
Raw Linseed Oil, in pipes.....per gallon		0 2 10
,, ,, ,, in barrels	,,	0 3 0
,, ,, ,, in drums	,,	0 3 2
Boiled ,, ,, in barrels	,,	0 3 3
,, ,, ,, in drums	,,	0 3 5
Turpentine, in barrels	,,	0 4 4
,, in drums (10 galls.)....	,,	0 4 6
Genuine Ground English White Lead, per ton		51 0 0
(In not less than 5-cwt. casks.)		

Extra for 1-cwt. kegs over 5-cwt. casks is 5/9 cwt.

GENUINE WHITE LEAD PAINT.

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots per ton delivered	£ s. d. 70 0 0
Red Lead, Dry (packages extra) .. per ton	37 0 0
Best Linseed Oil Putty ..... per cwt.	0 13 0
Size. XD quality ..... fkn.	0 3 6

VARNISHES, &c.

		Per gallon.
Oak Varnish .....Outside		0 14 0
Fine Do.	Do.	0 16 0
Fine Copal.....	Do.	0 18 0
Pale Copal.....	Do.	1 0 0
Pale Opal Carriage	Do.	1 4 0
Best Do.	Do.	1 12 0
Floor Varnish .....Inside		0 18 0
Fine Pale Paper	Do.	0 18 0
Fine Copal Cabinet	Do.	1 2 0
Fine Copal Flatting.....	Do.	1 0 0
Hard Drying Oak	Do.	0 18 0
Fine Hard Drying Oak	Do.	0 19 6
Fine Copal Varnish	Do.	1 0 6
Pale Do.	Do.	1 12 0
Best Do.	Do.	1 2 6
Best Japan Gold Size.....		0 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cuirass Black Enamel.....		0 7 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

per ft.		per ft.
15 oz. fourths .. 2½d.	32 oz. fourths	6½d.
15 ,, thirds .... 2½d.	32 ,, thirds.....	7½d.
21 ,, fourths .. 3½d.	Obscured Sheet, 15 oz.	3½d.
21 ,, thirds .... 3½d.	,, 21 ,,	4½d.
26 ,, fourths .. 4½d.	Fluted, 15 oz. 6½d., 21 oz.	9d.
26 ,, thirds .... 5d.	Em'lld 15 oz. 4½d., 21 oz.	5½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
Rolled plate ¼ in.....	4½d.
Rough rolled ⅜ in.	5½d.
Rough rolled, ½ in.	5½d.
Figured, Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White....	5½d.
Do. tinted	8d.
Rolled Sheet	5d.
White Rolled Cathedral	5d.
Tinted Do.	7½d.

Cast plate is same price as rough rolled.

"VITA" GLASS.	per ft. s. d.
Clearsheet—not exceeding 1 foot	1 0
Do. do. 2 feet	1 3
Do. over 2 feet	1 9
Polished plate—not exceeding 1 foot	1 6
Do. do. 2 feet.....	3 0
Cathedral—not exceeding 1 foot	1 0
Do. larger sizes	1 6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1 0
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide.....	2 9

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. for the Building Industry from August 1. Grade A towns, 1/6½ per hour; Grade B, 1/4; Aberdeen has a special rate of 1/5½. The new rate for Plasterers has been fixed at 1/6½. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification...	A	A¹	A²	A³	B	B¹	B²	B³
Craftsmen	1/6½	1/5½	1/5	1/4½	1/4	1/3½	1/3	1/2½
Labourers	1/2	1/1½	1/0½	1/0½	1/0	-/11½	-/11½	-/11

Aberdeen	A	Dundee	A	Hawick	A¹	Perth	A¹
Airdrie	A	Dunfermline	A	Helensburgh	A	Perthshire	A²
Alexandria	A	Dunoon	A	Inverness	B	Peterhead	A
Arbroath	A	East Lothian	A	Kilmarnock	A	Renfrewshire	A
Ayrshire	A	Edinburgh	A	Kincardineshire	A	Rothesay	A
Bathgate	A	Falkirk	A	Kinross-shire	A	Roxburghshire	A
Bo'ness	A	Forfarshire	A¹	Kirkcaldy	A	St. Andrews	A
Broughty Ferry	A	Fort William	B	Lanarkshire	A	Selkirkshire	A
Clackmannanshire	A	Galashiels	A¹	Leith	A	Stirling	A
Coatbridge	A	Glasgow	A	Midlothian	A	Stirlingshire, West	A
Dumbartonshire	A	Greenock	A	Motherwell	A	West Lothian	A
Dumfries	A²	Hamilton	A	Peeblesshire	A²	Wishaw	A
Dumfriesshire	A						

NOTE.—Bricklayers in Glasgow and District, Dumbartonshire, Renfrewshire and Lanarkshire receive 1/7 per hour.

The information given in this table is copyright. The rates of wages in various towns in England and Wales are given on page 938.

THE SCOTTISH BUILDER

NEW BUILDINGS

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned. Items should be received at THE BUILDER *Office not later than Wednesday morning.*

ALLOA.—EXTENSION.—The Clackmannanshire Public Health Committee have decided to recommend an extension to the infectious diseases hospital by the addition of a wing accommodating 24 beds.

ALVA.—BUILDING.—The T.C. has passed plans for the erection of a new police station on a site at Park-street and Queen-street.

ARBROATH.—HOUSING.—The T.C. have received approval from the Department of Health for Scotland for the sketch and layout plan of the Rosebank and Guthrie Hill housing site.

AUNBANK.—RECONSTRUCTION. — Plans to be prepared for the reconstruction of Drumley House, for a Mothers' Rest Home for Ayrshire C.C., at estimated cost of £1,100. Mr. William Reid, architect, Wellington-square, Ayr.

AYR.—BUILDING.—Dean of Guild Court has passed the following plans: Territorial Army Association—four buildings in Chalmers-road and Belmont-avenue, to be used as houses, at £1,400; and William Govan & Sons—three double villas in Blackburn-road, at £3,000.

AYRSHIRE.—CENTRES.—County E.C. approved of plans for the erection of junior instruction centres at Kilmarnock, Ayr, Dalry, and Cumnock, at £30,537.

BARRACHNIE.—EXTENSION. — Plans prepared by the company's own architects for an extension to the oil and chemical works at Barrachnie, which the Shettleston Oil and Chemical Co., Ltd., intend to build there.

BELLSHILL.—HOUSES.—The Lanarkshire C.C. have decided to build more new houses at Bellshill. The authorities have inspected three sites—Mossend, the Glebe-street vicinity at the west of Bellshill, and a site at Thornroad Farm.

BONNYRIGG AND LASSWADE.—HOUSING.—The T.C. has decided to approach the agents of Dobbie's Knowe Park and ascertain if it were available to the Council as a feuing site.

BUSBY. — HOUSES. — The Renfrewshire Public Health Committee has decided to proceed at once with the erection on the golf course of the whole of the 104 houses.

DUMBARTON. — CREAMERY. — Dean of Guild Court has passed plans for a large and up-to-date creamery for the Scottish Co-operative Wholesale Society on a site at Hartfield.

DUMBARTON. — EXTENSION. — Plans are now before the Dean of Guild Court for further extensions to the premises of Messrs. Babcock and Wilcox, Dumbuck works.

DUMBARTONSHIRE. — HOUSING. — The C.C. approved a minute on rehousing involving an expenditure of £219,050. The minute included 434 new houses under the 1935 Act. Of the houses under the 1935 Act, 170 will be erected at Alexandria and Renton, at a cost of £69,040; 80 at Duntocher, costing £34,300; 48 at Old Kilpatrick, costing £20,820; 40 at Cumbernauld, costing £18,000; and 36 at Croy, costing £17,310. Approval was also given to the erection of a new clinic at Hartfield, Dumbarton, at a cost of £5,250.

DUNDEE.—BUILDINGS.—Plans and sections of the following proposed new buildings, etc., have been lodged at the office of the City Engineer: Baffin-street—garage for A. G. Kidd (architect, T. L. Gray, 2, India-buildings); Church-street—alterations for the Vestry of St. Salvador's Church (architect, James Findlay, 33, Albert-square); Clepington-road (off)—tenements for Gibson & Dargie (architect, J. Johnston, 32, Bank-street); Wolseley-street and Clepington-street—houses for the T.C.

(*Continued on page* 946.)

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	8	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	3
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundations 1 to 6	per yard cube	24	0
Add if in underpinning in short lengths	" "	5	0
Add if in floors 6 in. thick	" "	2	0
Add if in beams	" "	2	6
Add if aggregate 1 : 2 : 4	"	8	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.		1	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	26	0	0
Add if in stocks	"	6	0	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	5	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	"	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork:—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	0	9
Rubbed and gauged jointed in putty camber or segmental	"	0	5	9

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	0	11
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	" "	9	6
Three-quarter-inch on flats in two thicknesses	" "	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	0

MASON.

York stone templates fixed	per foot cube	12	9
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Beer stone and all labour fixed	" "	15	0
Portland stone fixed	" "	15	6
Chilmark stone fixed complete	" "	13	6

SLATER.

Welsh 16 in. × 8 in. 3 in. lap. including nails	per square	70	0	
Do. 20 in. × 10 in. Do. Do.	"	71	6	
Do. 24 in. × 12 in. Do. Do.	"	73	6	

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	3	6	
Do. joists	" "	4	0	
Do. roofs, floors and partitions	" "	4	6	
Do. trusses	" "	6	9	

	½"	1"	1½"	2"
Deal rough close boarding per sq.	30/-	35/-	43/-	70/-

Flat centering for concrete floor, including struts or hangers	"	50	0	
Do. to beams	per ft. sup.	0	8	
Centre for arches	"	1	6	
Gutter boards and bearers	"	1	0	

FLOORING.

	½"	1"	1¼"	1½"
Deal edges shot per sq.	—	38/-	45/-	52/-
Do. tongued and grooved "	—	43/-	50/-	58/-
Do. matchings "	40/-	45/-	—	—
Moulded skirtings, including backings and grounds per ft. sup.	1/4	1/7	1/9	2/3

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	9
Two Do. Do. Do.	" "	2	0
Add for fitting and fixing	" "	0	2
Deal cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights, average size		3	3

DOORS.

	1¼"	1½"	2"
Two-panel square framed per ft. sup.	2/1	2/3	2/5
Four-panel Do. "	2/4	2/6	2/9
Two-panel moulded both sides "	2/6	2/9	2/11
Four-panel Do. Do. "	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	12	0

	1"	1¼"	1½"
Plain deal jamb linings framed per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers "	1/2	1/4	1/7
Add if cross-tongued "	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/0	2/3	2/8	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. x 1½ in.	per ft. run	0	9
Mahogany handrail, average 3 in. x 3 in.	" "	5	6
Add if ramped	" "	11	0
Add if wreathed	" "	22	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	0
Plain compound girders	"	18	0
Do. stanchions	"	20	9
In roofwork	"	26	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/-	1/1	1/3	1/6
Ogee Do. Do.	"	1/2	1/3	1/9	2/3
Rain-water pipes with ears	"	1/3	1/10	—	—
Extra for shoes and bends	each	2/9	3/11	—	—
Do. stopped ends	"	1/1	1/4	1/9	2/6
Do. nozzles for inlets	"	2/2	2/7	3/7	4/-

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	37	6
Do. do. flats	"	36	6
Extra labour and solder in coated cesspools	each	6	0
Welt joint	per ft. run	0	4
Soldered seam	" "	1	6
Copper nailing	" "	0	3

	½"	¾"	1"	1¼"	2"	4"
Drawn lead waste per ft. run	10½	1/2	1/9	2/5	3/-	—
Do. service... "	1/3	1/8	2/2	3/2	—	—
Do. soil ..... "	—	—	—	—	—	6/-
Bends in lead pipe each	—	—	—	—	2/3	5/6
Soldered stop ends "	0/7	0/11	1/3	2/-	2/6	—
Red lead joints "	0/9	0/10	1/1	1/7	1/10	3/6
Wiped soldered joints "	2/-	2/6	2/9	3/5	4/3	6/-
Lead traps and cleaning screws "	—	—	—	10/-	13/-	—
Bib cocks and joints "	6/-	9/-	13/-	—	—	—
Stop cocks and joints "	10/6	12/6	17/6	50/-	—	—

PLASTERER.

			s.	d.
Render, float and set in lime and hair	per yard sup.		2	0
Do. Do. Sirapite	" "		2	3
Do. Do. Keen's	" "		3	0
Add saw lathing	" "		1	4
Add metal lathing	" "		2	4
(Not including hangers or runners, etc., for suspended ceilings.)				
Portland cement screed	"		1	7
Do. plain face	" "		3	3
Mouldings in plaster	per 1 girth		0	1½
One-and-a-half granolithic pavings	per yard sup.		4	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	6½
26-oz. Do.	" "	0	7½
Obscured sheet	" "	0	8
⅛-in. rolled plate	" "	0	9
¼-in. rough rolled or cast plate	" "	0	10
¼-in. wired cast plate	" "	1	1

PAINTER.

			s.	d.
Preparing and distempering, 2 coats	per yard sup.		0	7½
Knotting and priming	" "		0	7
Plain painting, 1 coat	" "		0	9
Do. 2 coats	" "		1	2
Do. 3 coats	" "		1	9
Do. 4 coats	" "		2	4
Graining	" "		2	3
Varnishing twice	" "		1	9
Sizing	" "		0	3
Flatting	" "		0	7
Enamel	" "		1	1
Wax polishing	per foot sup.		0	6
French polishing	" "		1	3
Preparing for and hanging paper	per piece 2/- to		4/-	

*These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts, and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

THE SCOTTISH BUILDER

(*Continued from page* 944)

DUNDEE.—Reconstruction. — Details of the scheme for reconstructing the High School, at a cost of £30,000, were disclosed at a meeting of Dundee Chamber of Commerce.

DUNDEE.—School.—The T.C. has purchased ground for a site on which to build the new advanced school for Catholic pupils at Graham-street.

DUNFERMLINE.—Reconstruction. — The Fife C.C. have acquired the building known as Bruce Embroidery Works, for the purpose of reconstructing it for use as a junior instruction centre.

EDINBURGH. — Church. — The Dean of Guild Court has granted warrant to the Congregational Union of Scotland Nominees, Ltd., to erect a church and hall in Boswall Parkway, Granton Mains. The church will have seating accommodation for 500 people, and the hall will accommodate 350. The cost of the scheme is estimated at £5,000. Other plans passed by the Court include : J. Cruickshank, Ltd.—to demolish and erect new building at 20, Duff-street; T. Sutherland Henderson—to erect 42 houses in Brunstane-road, South.

EDINBURGH.—Houses.—Plans have been prepared for 60 houses at Comley Bank-grove and other sites. Mr. Stewart Kaye, architect, 14, Hill-street, Edinburgh.

EDINBURGH.—Houses.—The Corporation are to erect at Lower Granton-road 99 houses in 2-storied blocks. Mr. E. J. MacRae, City Architect.

FRASERBURGH.—Centre.—Plans are in hand for new junior instruction centre for the C.C. Mr. George McKay, architect, 177, Union-street, Aberdeen.

GALASHIELS.—Rebuilding.—The Selkirk C.C. has decided to rebuild the road bridge at Galashiels Railway Station, at £20,000.

GLASGOW.—Houses.—The lay-out plans for 136 cottage homes for aged poor persons at Crookston have been approved by the Glasgow P.A C.

GLASGOW.—Buildings.—Plans have been prepared and approved for a scheme of reconstruction and additions to the Marine police offices, Anderson-street, and at the police barracks at Nicholson-street. Mr. Thomas Somers, architect, Office of Public Works, Glasgow.

GLASGOW.—Building.—The Corporation Town Planning Committee has approved of plans, including the following : Extensions to the temporary school at Hillington, a Roman Catholic hall at Saracen-street, Possilpark, a Boy Scouts' hall at Springburn, and an addition to Albion Motors, Ltd., factory, Scotstoun.

GLASGOW.—Bridge.—The Corporation is to begin work at an early date on the construction of the bridge over the Clyde between Finnieston and Plantation, which is estimated to cost £1,200,000. It was reported that the claims by the Clyde Trust and shipping firms for compensation for properties taken over to clear the sites had been settled.

GLASGOW.—Additions.—Plans prepared for scheme of reconstruction and additions in Maryhill-road. Messrs. John Laird and Son, architects, 11, Bothwell-street.—Plans also prepared for new church, etc., in Duntocher-street, Springburn. Mr. James Carruthers, architect, 209, St. Vincent-street.

GLASGOW. — Extension.—Plans for the erection of an extension to the public baths in Clynder-street, Govan, estimated to cost £25,000, were approved by Glasgow Dean of Guild Court. The Court also granted lining to Messrs. J. & R. Snodgrass, Ltd., 92, Washington-street, for the building of a six-story grain store facing Anderston Quay. The store is estimated to cost £10,000, and will be built on the site of the former Clyde Hotel.

HADDINGTON.—Extension. — A scheme has been prepared for extension to the Vert Memorial Hospital. The plans are being prepared by Mr. J. Douglas Miller, architect, 5, Forres-street, Edinburgh.

HAMILTON.—Extension.—The Dean of Guild Court has passed plans for the erection of a large brickwork on a site at the old Clyde Colliery near the Bothwell-road. The firm is that of Messrs. John and R. Dd. Findlay, of Rutherglen, and the plans include the erection of a sixteen-chamber kiln, pan mills, factory and office accommodation.

INVERNESS.—Bakery.—The Dean of Guild Court have granted permission to Messrs. Burnett's Inverness Bakery, Ltd., Academy-street, to erect a new bakery in Longman-road, at £4,800.

INVERURIE.—Houses.—The T.C. have decided to proceed with the erection of 24 houses at Middlemuir-road and eight houses at Port Elphinstone.

IRVINE.—Factory.—A new explosives factory is to be built on a site at the Harbour for the Imperial Chemical Industries, Ltd.

KILMARNOCK. — Cottages. — The T.C. have at present under consideration the erection of 30 cottages for the use of old couples, at £8,850.

LANARKSHIRE. — Housing. — The C.C. have new housing schemes on hand for which plans are being prepared, these being at Holytown, Newarthill, Larkhall, East Kilbride, Rutherglen Parish, Lesmahagow, and Leslie. Mr. Peter Smith, Lanarkshire County Housing Architect, Hamilton.

LARBERT.—Building.—Plans have been passed by the Public Health Committee of the C.C. for the erection of an up-to-date public cloakroom, with lavatories, at Larbert, near the Station Bridge.

PAISLEY. — Extensions. — The Dean of Guild Court has approved plans on behalf of Messrs. William Gillespie and Son, Ltd., motor engineers, 53, Love-street, for extension to their premises.

PAISLEY.—Shops.—Plans prepared for new shops, warehouses, offices, etc., near The Cross. Mr. Leslie C. Norton, architect, 45, Albemarle-street, London.

PETERHEAD.—Centre.—Plans are in hand for new junior instruction centre for the C.C. Mr. Edwin Williamson, architect, 152, Union-street, Aberdeen.

STONEHAVEN.—Bridge.—The Kincardine C.C. has approved the plans prepared by Messrs. L. G. Mouchel and Partners, Ltd., Glasgow, for a spandrel bridge at Tilbouries, at £4,489 6s. 6d.

STRANRAER.—School.—The Wigtonshire C.C. have approved of a new £25,000 school. Mr. R. G. Logan, County Architect, Stranraer.

UDDINGSTON. — Centre. — The Lanarkshire C.C. are to erect a new junior instruction centre. Mr. John Stewart, architect, Albert-street, Motherwell. Mr. Duncan M. Falconer, measurer, 219, St. Vincent-street, Glasgow.

NEW CINEMAS

BLACKPOOL.—The South Shore Theatres, Ltd., have acquired a site on the corner of Waterloo-road and Lytham-road for the erection of a cinema to seat over 2,000.

DOVER.—Plans for a new cinema in London-road, for Mr. Phillips, have been submitted to the Town Council by Mr. Pickles.

ELTHAM.—Messrs. Halse & Sons, Ltd., 5, Chapel-street, S.E.18, are the builders for the cinema to be erected on the Well Hall Estate for the Odeon Circuit. The architect is Mr. Andrew Mather, F.R.I.B.A., Leicester-square Chambers, W.C.2. A number of sub-contracts have been let.

GLASGOW.—Cranston's Picture House, Renfield-street, has been acquired by Messrs. Harry and Claude Winocour, 108, Regent-street, Glasgow. Extensive alterations are being considered.

KETTERING.—Messrs. Nat Cohen & Rafer have acquired a site for the erection of a cinema to seat 1,850. The architect is Mr. George Coles, F.R.I.B.A., 40, Craven-street, Strand, W.C.2.

MANCHESTER. — Mr. S. Eidinow, 41, Nightingale-lane, London, S.W.12, proposes the erection of a cinema at Stockport-road and North Western-street.

PORT ERIN, I.O.M.—The Ramsey Amusements, Ltd., Douglas, propose to build a cinema with accommodation for about 750 persons, a stage, two shops, etc. Plans have been prepared by Messrs. Lomas & Barrett, L.R.I.B.A., Martins Bank Chambers, Douglas. No contracts placed.

ST. IVES.—Plans have been submitted to the Town Council for a cinema at the Stennack, by Mr. C. Drage.

STONEHAVEN.—A cinema to seat 1,000 is proposed in David-street at an estimated cost of £18,000. Contracts will be placed shortly.

TETTENHALL. — Mr. R. Satchwell, L.R.I.B.A., 6, New-street, Birmingham, has prepared plans for a cinema at New Bridge-road, to seat 1,200 persons.

TROON.—A cinema is to be erected in Portland-street with accommodation for 1,200 persons, four shops, car park, etc. The architects are Messrs. Jas. McKissack & Son, L.R.I.B.A., 68, West Regent-street, Glasgow. No contracts have been placed.

WELLINGBOROUGH.—Palace Theatre Co. (Wellingborough), Ltd., "the Palace," Rushden, have acquired a site at Alfred-street and College-street for the erection of a theatre, with stage and dressing-rooms, to seat 1,500.

WEST HARTLEPOOL.—Messrs. W. & T. R. Milburn, F.R.I.B.A., 17, Fawcett-street, Sunderland, have prepared plans for the erection of a cinema in Hart-road for Messrs. Holliday, Durham.

WHITEHAVEN.—Mr. Alan V. Blandford, of Whitehaven, has secured a main road site for the erection of a cinema.

YORK.—Plans for additions to the Picture House, Coney-street, have successfully been submitted to the Corporation by York Cinema, Ltd.

NEW COMPANIES

The particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies Registry.

Westobys (Builders' Merchants), Ltd. (306,745). Registered November 4. 31, Southbury-road, Enfield. Builders' and decorators' merchants, etc. Nominal capital, £2,000.

Herbert Johnson (Builders), Ltd. (306,718). Registered November 4. 609, Walsall-road, Great Barr, Birmingham. Nominal capital, £5,000.

Roffe Decorations, Ltd. (306,737). Registered November 4. 141, Moorgate, E.C.2. Builders, contractors, etc. Nominal capital, £1,000.

Weston Coyney Brick and Tile Co., Ltd. (306,746). Registered November 4. Weston Coyney Brick and Tile Works, Longton. Nominal capital, £500.

Savile Estates, Ltd. (306,738). Registered November 4. 10, New-square, W.C.2. Builders and contractors, etc. Nominal capital, £5,000.

A. Plant, Ltd. (306,659). Registered November 2. Plumber and builders' merchant. 463, Attercliffe-road, Sheffield. Nominal capital, £2,000.

Meadway Estates (Sale), Ltd. (306,651). Registered November 1. Builders and contractors. "The Avenue," Ashton-on-Mersey, Sale, Cheshire. Nominal capital, £2,000.

Green Elm Lodge Property Co., Ltd. (306,583). Registered October 31. 42, Kingsbury-parade, Burnt Oak, Edgware. To acquire any lands or buildings, etc. Nominal capital, £4,000.

Southampton Properties Securities, Ltd. (306,554). Registered October 30. To acquire lands, buildings and hereditaments, etc. Nominal capital, £50,000. D. G. Firth, M.A., Holt House, Upper Bassett, Southampton.

Knox & Wells (1935), Ltd. (306,681). Registered November 2. 29a, Bangor-street, Cardiff. Builders and contractors, etc. Nominal capital, £5,000.

TRADE NEWS

Hornsey Town Hall.

We are informed that the cast stone used on this building is "Durus" stone, supplied by Messrs. D. G. Somerville and Co., Ltd., from their Durus Works, New Cross, S.E.

"Plumbing and Domestic Engineering."

Messrs. George Newnes, Ltd., are issuing in about 30 weekly parts, price 1s. each, a comprehensive work on "Plumbing and Domestic Engineering," under the advisory editorship of Mr. E. Thomas Swinson, F.R.S.I. The work, written by experts, is practical and is copiously illustrated.

A Motor Company's Report.

The directors of Vauxhall Motors, Limited, have declared an interim dividend of 50 per cent. on the ordinary shares of the company. The directors state that turnover has been well maintained, and although large additions have been again made to the factory at Luton many sections of the factory are still very heavily stressed. The new buildings, however, are rapidly being equipped to ease this pressure, and working conditions are thereby being greatly improved.

Termination of Rationalisation Agreement.

Messrs. Ruston and Hornsby, Ltd., and R. A. Lister and Co., Ltd., in a joint letter to their distributors, have announced the fact that the Rationalisation Agreement entered into between them in 1930 is being terminated by mutual consent on March 31 next. The reason for the termination, we are advised, is a gradual change in basic factors affecting the respective businesses which could not have been envisaged at the time the agreement was entered into. It has therefore been felt by the boards of both companies that their individual and joint interests will be best served by the termination.

A New Drill.

The Rawlplug Co., Ltd. (Cromwell-road, S.W.7), have added a new tool to their well-known range of tools which we have tested with satisfactory results. This "new improved Rawlplug 'Speedtool'" will not jam in the holder, is self-ejecting, and there are no parts which can work loose. The drill of the Speedtool is provided with longitudinal grooves of special section such that when sharpening becomes necessary the most effective cutting form can be obtained without trouble using an ordinary grindstone, or even a common paving stone. The cuttings are automatically expelled by the vibratory action as the bit enters the work; thus the tool remains free and the energy communicated to it by the hammer blow is transmitted to the cutting face in its entirety, instead of being wasted in friction with the wall of the hole, while the operator can change a drill in the minimum of time.

New London Showroom for Coal.

Every kind of modern coal-burning appliance will be on view in actual operation at the Coal Utilisation Council's new showrooms at British Industries House, Marble Arch, which were formally opened on November 21—the day of the National Coal Convention. Many people, even yet, do not realise how convenient, economical, and unlike its predecessors the modern open fire, continuous-burning stove or coal-burning cooker can be. Special air conditioning apparatus has been installed to ensure an equable temperature in spite of this collection in one room of so many appliances all actually alight, and a chimney 80 ft. high has been constructed through the middle of the buildings. Amongst the exhibits will be two mechanical stokers attached to central heating boilers which will demonstrate the latest method of burning coal smokelessly and providing central heating and hot water at the minimum cost with automatic control.

Electrical Contractors' Association.

At a recent meeting of this Association's Council a number of applications for membership were considered, and the following contractors were admitted to full membership: A. Meckhonik, S.E.15; R. Sawford, N.W.4; S. C. Pygall (Sellcon Electrical Co.), Bethnal Green; C. C. E. Champion (E. and C. Champion), Sutton, Surrey; J. W. Howe (Duncan Mays), N.W.10; A. E. Hayward (A. E. Hayward and Son), Bath; G. R. Ennor, Falmouth; A. C. Farrow, Nottingham; N. Tizzard, Ilkeston; A. Quain, Sowerby Bridge; J. W. Storr (Storr and Co.), Hull; B. L. Oliver, Birtley; G. E. Taylor (G. E. Taylor, Ltd.), Littleborough; Bernard Howard, Stockport.

The following contractors were admitted to Associate membership: Edward Woolley, Brentwood; R. B. Johnson, Gloucester; John Bell, Sleaford; Frank High, Blackpool; H. F. Russon (Russon's), Stretford; F. R. Little, Ashington.

A Circular Strongroom Door.

At the Old Ford works of Messrs. John Tann, Ltd., the safe manufacturers, there was given recently a demonstration of some new tests upon "Tannsteel," the new alloy-steel which has been invented by the firm and with which a special door is constructed. This is a circular door eight feet in diameter and three feet thick, and in addition to its keylocks, combination locks and time locks this door contains a number of protective devices now used for the first time. It is destined for the head office of an important Continental Bank and forms the main entrance into a large system of treasuries and strongrooms which have been installed by John Tann, Ltd. The construction of the doors of this new type has been made possible by the invention of "Tannsteel," which gives a complete security claimed never before to have been attained. Tests upon "Tannsteel" were also carried out; firstly, impact and drilling tests showing that it is unbreakable and impervious to any form of mechanical tool; and secondly, tests with the most powerful types of oxy-acetylene blowpipes and also with the oxygen lance. With the latter apparatus a piece of battleship armour-plate seven inches thick was penetrated in a few seconds, whereas no impression was made upon "Tannsteel." The tests carried out were brief reproductions of the exhaustive tests carried out by the British Oxygen Company at their main engineering works, when they were given unlimited time, tools, gas, and appliances in an attempt to penetrate the test slab. After a week's work they had not succeeded in making a single small hole through the "Tannsteel."

NEW PUBLIC WORKS

BATH.—The Corporation has agreed on the promotion of a Bill which provides, among other things, for the removal of the Royal Mineral Water Hospital to a new site and the vesting of the existing site in the Corporation.

DURSLEY.—A contract for 70 houses at Dursley for R.D.C. has been placed with Messrs. F. N. Wright, of Lydney, who tendered at £22,537.

GREAT BRITAIN.—Among the contracts open to tender advertised in this issue by public authorities are:—East Suffolk C.C.—Erection of new area Council school at Needham Market, and enlargement of Council school at Carlton Colville, near Lowestoft; Leicester—307 houses, Northfield housing estate; Birmingham City—erection of coroner's court at Victoria Law Courts; Durham C.C.—additions and alterations to Bishop Auckland Girls' School; Luton T.C.—extension to transport depot, Park-street; Kent County Mental Hospitals Committee—new admission hospital and villas at County Mental Hospital, Maidstone; Chester—new senior schools at Rudheath, near Northwich; Lambeth—extension to West Norwood library, S.E.27.

LEYLAND.—Leyland District Council has approved a scheme for the centralisation of new Council buildings, including a fire station, mortuary, ambulance station, six cottages, and a car park, at an estimated cost of £20,753.

NEWS ITEMS

A Presidential Election.

Mr. G. T. Cotterell, M.Inst.C.E., M.Cons.E., M.Inst.M. and Cy.E., M.Inst.W.E., has accepted nomination as President of the Institution of Sanitary Engineers.

Railway Electrification.

A brochure entitled "The Case for Electrification of the Railways" has been issued by the British Electrical Development Association.

Municipal Honour for Builder.

Mr. Wm. C. Reade, builder and contractor, of Aldeburgh, has been elected Mayor of Aldeburgh for the current year. Mr. Reade is an Alderman of the Borough, and previously held this position in 1926-27 and 1927-28.

Scientific Aids to Management.

An exhibition of scientific aids to management, arranged by the Department of Industrial Co-operation of the British Association, has been opened by Sir Josiah Stamp, K.B.E., President-elect of the British Association, at British Industries House, Marble Arch, W.1.

Reinforced Concrete Association Elections.

The Reinforced Concrete Association notifies that the following have been admitted to membership: Contractors: Messrs. Fred Mitchell and Son, Ltd., Manchester; Messrs. Purdie, Lumsden and Co., Ltd., Newcastle-on-Tyne. Steel reinforcement: Messrs. McCall and Co. (Sheffield), Ltd., Sheffield.

"Punch" Almanack.

This almanack for 1936 has just been published and is a very attractive number, consisting of 48 pages of matter, 16 of which are in colour. A double-page "Election" cartoon in colour by Ernest Shepard is an exceptionally amusing drawing, as, in fact, are others in this interesting number.

London's Water Line after the Fire.

Mr. Sydney Perks, F.S.A., F.S.I., late architect and surveyor to the Corporation of the City of London, has published an interesting book on "The Water Line of the City of London after the Great Fire," illustrated by maps and plans. It may be obtained, price 12s 6d. net, from Messrs. Taylor and Francis, Red Lion Court, Fleet-street, London, E.C.4.

Orpington Building Land.

Crofton Hall, Orpington, a freehold residential and building estate of 32 acres, will be offered by auction by Messrs. Knight, Frank and Rutley, in conjunction with Messrs. W. Levens and Son, at the Hanover Square Estate Room on December 5. The property is "ripe for immediate development," has all main services available, and is town-planned for eight houses to the acre. It also includes a residence of moderate size, with gardens, two cottages, garage and outbuildings.

A New Factory at Leyton.

A new factory at Leyton, E., for Messrs. I. and R. Morley, Ltd., was opened on Wednesday, November 13, by the Lord Mayor of London (Sir Percy Vincent), who was welcomed by Lord Hollenden, who, in his opening remarks, said it was hard to believe that that factory started operations on Monday, November 4, and that on August 8 the spot was still a grass field. They would all appreciate the high organisation and the efficiency which alone had enabled that to be done. He thanked the builders, Commercial Structures, Ltd., for the magnificent manner in which they responded to all the demands, and he returned thanks to their directors and the staff and workers. The Lord Mayor then formally opened the building, after which the guests made a tour of inspection.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.
¶ Denotes *accepted by H.M. Government Departments*.

Atherton.—46 non-parlour type houses on the Hag Fold estate, for the U.D.C. Mr. E. L. Boydell, surveyor :—

*G. & J. Seddon, Ltd., Little Hulton, near Bolton £13,400 10

Birmingham.—For (a) five pairs of non-parlour two-bedroom cottages in Water Orton-lane, Minworth; and (b) administration block and one pair of cottages in Friday-lane, Barston, near Hampton-in-Arden, for the District Drainage Board. Mr. H. C. Whitehead, engineer, Rookery Park, Kingsbury-road, Erdington :—

(a) *R. T. Rix & Son £2,887
(b) *F. Judd 1,550
(Both of Birmingham.)

Birtley.—Masonic hall. Messrs. S. J. Stephenson & Gillis, 2, Saville-place, Newcastle-on-Tyne, and J. W. Corking, 16, West-street, Gateshead, architects :—

*W. Norman, 3, West-lane, Chester-le-Street.

Blackwell.—Sanitary conversions of 107 houses into water carriage system, for the R.D.C. Mr. A. H. Elliott, A.M.I.C.E., engineer and surveyor, Gilcroft-chambers, Church-lane, Mansfield :—

*J. E. Bryant, South Normanton £645

Bolton.—Electrical installations to 126 houses, flats, etc., on Willows-lane estate, for the T.C. Mr. V. M. Hughes, Housing Director, Westminster Bank-chambers, Old Hall-street North :—

‡Corporation Electric Fittings Department, Bolton £885

Bridge-of-Weir.—Workshops and stores at the Orphan Homes of Scotland. Mr. J. Ingles, architect, Main-street :—

*John Windrow & Sons, Bridge-of-Weir.

Bridgnorth.—18 houses on the Grove site, for the T.C. Mr. E. Trevor, Borough Surveyor :—

*W. A. Sherratt, Church Stretton £5,977

Brighton.—Erection of new market buildings, administrative offices and other accessory buildings on the site in Circus-street, for the T.C. :—

Geo. Lynn & Sons, Ltd., Brighton ... £47,200
R. Cook & Sons, Ltd., Crawley 46,590
Rice & Son, Ltd., Brighton 45,828
Jas. Barnes & Sons, Brighton 45,748
Bartley & Ward, Ltd., Crawley 45,495
H. Pannett, Ltd., Brighton 45,468
Field & Cox, Ltd., Brighton 45,300
Melville, Dundas & Whitson, Ltd., London 44,643
McKellar & Westerman, Ltd., Hove 44,556
*F. T. Wilson & Sons, Ltd., Brighton 44,375
Percy Bilton (Construction), Ltd., London (informal) 44,151
E. D. Winn & Co., Ltd., London ... 43,699
Ringmer Building Works, Ltd., Ringmer (withdrawn) 41,917

Bristol.—Four shops and eight houses at Glyn Vale, for the T.C. :—

*E. A. W. Poole & Sons £4,792

Bristol.—48 non-parlour type houses on the Southmead estate, for the T.C. :—

*John Knox (Bristol), Ltd. £14,832

Bushey Heath.—Erection of convent, Caldecote Towers. Mr. R. E. Dixon, L.R.I.B.A., architect :—

Contractors—*Segrue & Melley, Brecknock-road, N.7.
Floors—*Truscon Precast, London, S.W.1.

Castle Bromwich.—Extension of the British Industries Fair building—

Steel roof and sides—*J. Elwell, Ltd., Oldbury.
*Gibbons Bros. (Dudley), Ltd., Dudley.
Wood roofs—*Normans (Wolverhampton), Ltd.
Floors foundations—*Tarslag (1923), Ltd.
Drains and water mains—*Economic House, Wolverhampton.
Builders' work—*A. Ashton, Birmingham.
Ventilation—*T. Ash & Co., Ltd., Birmingham.
Electrical work—*Springvale Electrical Co., London, W.14.
Gas fittings—*City of Birmingham Gas Dept.

Cheltenham.—Petrol pump stand, for Messrs. Haines & Strange, Ltd. Messrs. L. W. Barnard & Partners, architects :—

Reinforced concrete engineers—*Trussed Concrete Steel Co., Ltd., London.

Dover.—One house at Hougham, one at Ewell Minnis, two at St. Margarets and four at Lydden, for the R.D.C. :—

*Mr. Collins, Whitfield—
Hougham £400
Ewell Minnis 400
St. Margarets 700
*Mr. Taylor, Dover—
Lydden 1,372

Douglas.—Convenience in the playing fields, for the T.C. Mr. H. A. Bridge, M.I. and Cy.E., Borough Engineer and Surveyor. Mr. L. Hamilton Kearne, A.R.I.B.A., registered architect. Quantities by the architect :—

*Creer Bros., Demesne-road, Douglas £150 10

Ealing.—Warehouse in High-street, for Mr. L. C. Lamerton. Mr. L. T. Atkinson, architect :—

Floors—*Truscon Precast, London, S.W.1.

Ealing.—Erection of the Greenford Fire Station, for the T.C. :—

Thomas Bros., Wembley £3,775 15 6
E. Thomas & Sons, Hanwell ... 2,064 0 0
A. E. Brown, Ealing 1,986 0 0
W. J. Dickens, Ealing 1,978 0 0
F. Taylor, Tooting 1,954 10 6
Lees, of Enfield 1,847 18 0
London Construction Co. 1,742 13 3
*Payne Bros., Watford 1,706 0 0
(Borough Surveyor's estimate : £2,300.)

Ebbw Vale.—52 houses on the Glyncoed site, for the U.D.C. :—

*G. A. Brown £17,784

Edinburgh.—Reinforced concrete swimming pool, for Challenger Lodge, Trinity. Mr. A. Rochead Williamston, architect :—

Contractors—*James Cramb.
Reinforced concrete engineers—*Trussed Concrete Steel Co., Ltd., London, S.W.1.

Edinburgh.—Renewal of dressing boxes, etc., at the public baths, Dalry, for the T.C. Mr. E. J. MacRae, F.R.I.B.A., City Architect. Quantities by Mr. W. E. Gardner, F.F.S., Fernbank, South Morton-street, Joppa, Edinburgh :—

*J. and W. MacLauchlan, Annandale-street Lane £1,022 7 2

Essex.—Works, for the C.C. :—

Renovations to the Walthamstow dispensary—
*J. Jolliffe, Wanstead £130 0 0
Extension of the Black Notley Sanatorium—
*T. J. Bailey & Son, Chelmsford 78,900 0 0
Construction of a retaining wall adjacent to Terling Bridge No. 168—
*A. J. Arnold, Chelmsford 130 7 0
Enlargement of Kelvedon Hatch Council school—
*A. Saunders, Brentwood 2,800 0 0
Reconstruction of Little Sampford Bridge No. 315—
*A. G. Wicks, Braintree 2,077 13 5
Three domiciliary shelters—
*F. J. French, Chelmsford 119 5 0
Two cottages at Hedge Hall Farm, Broomfield—
*K. K. Mitchell, Oxney Green, Writtle 795 0 0
Heating the new X-ray department at the Oldchurch Hospital—
*Robinson & Sons, Seven Kings 199 12 0
12 houses for the staff at Brentwood Mental Hospital—
*Direct Labour 5,240 0 0

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

BELTA SKEN

THE STEEL SCAFFOLDING CO., LTD.

Imperial House, 80, Regent St., London, W.1

Telephone: Regent 1157

Evesham.—Four houses in two pairs at Ashton-under-Hill, for the R.D.C. Mr. R. J. Atkinson, engineer and surveyor :—

‡Wheeler & Mansell, Evesham £1,308

Glasgow.—Erection of Southcroft-street school, Govan. Messrs. Walker, Hardy & Smith, architects :—

Reinforced concrete work—*A. A. Stuart & Sons, Ltd., 111, Union-street, Glasgow.
Reinforced concrete engineers for the floors—*Trussed Concrete Steel Co., Ltd., London.

Guildford.—Nurses' home at the Warren-road Hospital, for the Surrey P.A.C. :—

*Grace & Marsh, Croydon £16,989

Hanley.—Rebuilding bank premises in Tontine-street, for Messrs. Lloyds Bank, Ltd., 71, Lombard-street, London, E.C.3. Mr. Holland W. Hobbiss, A.R.I.B.A., architect, 33, Newhall-street, Birmingham :—

*H. Willcock & Co., Ltd., Wolverhampton.

Hardington.—Secondary department at Knox Institute. Mr. F. W. Hardie, F.I.A.A., architect :—

Reinforced concrete work—*Alexander, Robb & Sons.
Floors—*Truscon Precast, London, S.W.1.

Harpenden.—Stripping and reslating the roofs of the houses at Kinsbourne-crescent, for the U.D.C. :—

*Harris (Harpenden), Ltd. £343

Hebburn-on-Tyne.—Culverting an open sewer, for the U.D.C. :—

Brims & Co., Ltd., Newcastle ... £6,807 0 0
J. J. Thompson & Sons, Ltd., South Shields 6,266 10 9
Tarslag, Ltd., Stockton 6,246 3 3
M. D. Young, Whitley Bay 6,100 17 2
*Surveyor of the U.D.C. (by direct labour) 5,669 10 0

Isle of Axholme.—22 houses at Luddington, for the R.D.C. Mr. J. T. Battye, surveyor, Queen-street, Epworth :—

*Green & Mackender, Scunthorpe £5,282

Kegworth.—Reconstruction and widening of River Bridge, spanning River Soar, and Canal Bridge, over Grand Union Canal, for the Notts C.C. Mr. J. C. Haller, County Surveyor, Nottingham :—

*G. G. Middleton & Sons, Ltd., Worksop £10,580

Kirkfield Bank.—Houses, for the Lanarkshire C.C. Mr. Peter C. Smith, Lanarkshire County Housing Architect, Hamilton :—

Excavation, brick and mason—
*Mrs. Mary Reilly, Lanark £1,293 3 11
Joinery, Carpentry and ironmongery—
*R. Simpson, Coalburn 692 0 9
Slater—
*A. C. Whyte & Co., Ltd., Carmyle 253 3 4
Plumber work and sanitary fixtures—
*J. Laing & Son, Wishaw 326 11 2

Lanarkshire.—16 houses on the new Ashgillhead area, for the C.C. Mr. Peter Smith, Lanarkshire County Housing Architect, Hamilton :—

Excavation, brick and mason—
*E. Morgan & Co., Ltd., Hamilton £2,317 0 11½
Joinery, carpentry and ironmongery—
*Robert Simpson, Coalburn 1,441 13 2½
Slater—*J. & G. Rowatt, Larkhall 578 2 7
Plumber work and sanitary fixtures—
*Duncan, Johnstone, Waterside, Stonehaven 681 0 0
Plaster—
*W. Doads Bertram, Lesnahagow 238 19 8½
Painter—
*J. Scott & Co., Lanark 147 7 11

Langport.—Four houses at Drayton and four at the "Garden City," Huish Episcopi, for the R.D.C. :—

(a) *F. Bird £1,180
(b) *Palmer & Palmer (Burrowbridge) 1,245

Leamington Spa.—52 houses on Shrubland Hall estate, for the T.C. Mr. J. Sutcliffe, Borough Engineer :—

*G. F. Smith & Sons, Leamington ... £16,629

¶Lee-on-Solent.—Underground cables, for H.M. Air Ministry :—

Derby Cables, Ltd., Derby.

Liverpool.—Church in Henshaw-street, for Rev. Murphy, P.P., and Catholic Authorities of St. Francis of Assisi, Garston. Mr. F. M. Reynolds, A.R.I.B.A., architect, 9, Albert square, Manchester :—

Builders—*Peace & Norquoy, Ltd.
Asphalting—*Penmaenmawr & Trinidad Lake Asphalte Co., Ltd., Liverpool.
Plastering and painting—*James Ferguson & Co.
Plumbing—*A. Longworth & Sons.
Slating—*Manchester Slate Co.
(Remainder of Manchester.)

†London.—Tenders accepted by H.M.O.W. for the week ended November 14:—

Wood tops for adjustable swing seats and tops for pedestal repetition tables—Wrinch & Sons, Ltd., St. Lawrence-works, Ipswich.
Steel cupboards—Roneo, Ltd., 17, Southampton-row, W.C.; and Vickers-Armstrongs, Ltd., Powder Mill-lane, Dartford.
Gerrard Telephone Exchange—installation of heating and hot water service—Heath & Co., 28, Bath-road, Chiswick, W.4.
Birmingham Head Post Office—alterations.—J. E. Harper & Son, Ltd., 72-82, Lombard-street, Birmingham.
Tunbridge Wells Head Post Office—erection of garage and workshop—R. Cook & Son, Ltd., Crawley.
Chairs for telephone operators—The Leabank Mfg. Co., Ltd., Charlton Meade-works, Hoddesden.

†London.—The following works contracts have been placed by the War Office during the week ended November 14:—

Feltham—reconstruction of hangars—Thomas & Edge, Ltd., London, S.E.
Colchester—artificers' work—A. E. Flory & Co., Colchester.

London.—Relaying the floors of 41 flats at Addington, Halton and Manchester-mansions with oak blocks, for the Islington B.C.:—

Gerrard & Sons, Ltd.	£3,486	0
J. C. Mather & Son	3,116	0
Castle Bros., Ltd.	3,011	10
*C. & F. Bryen, 48, The Broadway, Crouch End	2,606	0

(All of London.)

London.—Electrical installations in various properties, for the Islington B.C.:—

Jacob, White & Co., Ltd.	£429	13	3
Wells & Moulder	370	14	3
G. Hopkins & Sons (Clerkenwell), Ltd.	343	7	6
*A. G. Newton, 181, Holloway-road, N.7	310	18	0
Highbury Electrical Co.	304	14	6

(All of London.)

London.—Underpinning and repair work at Warltersville-mansions, for the Islington B.C.:—

J. Johnson & Sons	£498	0
J. C. Mather & Son	428	0
J. Gerrard & Sons, Ltd.	400	0
Goddard & Phillips	366	0
W. J. Smith & Co.	323	14
*Wm. Ball & Sons (Highbury), Ltd., 64, Drayton-park, N.5	323	5
L. H. Stephens	295	10

(All of London.)

London.—Reconstruction of Foley-street convenience, for the St. Marylebone B.C.:—

J. P. Williams, Ltd., 48, George-street, W.	£1,720

London.—Decorative and repair work at Regency-street dwellings, Admiral House and Marshall-street dwellings, for the Westminster City Council. City Engineer:—

Regency-street dwellings—			
*Townsends (Builders), Ltd.	£1,819	19	5
Admiral House—			
*Walter Lilly & Co.	574	0	0
Marshall-street dwellings—			
*Sims & Russell	148	0	0

London.—Adaptation of 13, 15 and 17, Cedars-road, Clapham, as a home for aged men, for the L.C.C.:—

George Parker & Sons, Ltd.	£17,721
Thomas D. Leng	16,993
Galbraith Bros., Ltd.	16,958
A. Coldman & Son, Ltd.	16,762
J. Garrett & Son, Ltd.	16,759
Hill & Gurr, Bromley	16,300
W. H. Gaze & Sons, Ltd., Kingston	16,283
Mullen & Lumsden, Ltd.	15,951
H. & J. Taylor (Contractors), Ltd.	15,943
Harry Groves & Son	15,796
George Newton & Hill	15,348
Holliday & Greenwood, Ltd.	14,980
H. Somerford & Son, Ltd.	14,822
Triggs & Co., Ltd.	13,996
*Bridge & Co., Ltd., 91-93, Effra-road, Brixton, S.W.2	13,847

(Architect's estimate, £14,500.)
(Remainder of London.)

London.—Workshop and store on the Kennington Park estate, for the L.C.C.:—

*Unit Construction Co., Ltd., London, W.C.2.

Loughborough.—New headquarters in Wanlip-road, Birstall, for the Building Committee of the Social Club and Institute. Mr. F. H. Smith, architect, Beaumont-chambers, 6, Pocklington's-walk, Leicester:—

*John C. W. Stacey, Birstall, near Loughborough.
(Estimated cost: £8,000.)

Manchester.—Erection of new Gateway Hotel, Wilmslow-road and Kingsway Extension East, Didsbury, for the Hydes Queen's Brewery, Ltd., Moss-lane West, Brookes Bar. Messrs. Graves & Ellerton, architects, 80, Mosley-street:—

Builders—*T. Gaskell & Co.
Bricklayers—*G. & W. Smith (Builders), Ltd.
Terra cotta—*Hathern Ware, Ltd., near Loughborough.
Glazed bricks—*Leeds Fireclay Co.
(Remainder of Manchester.)

Manchester.—New electrical accessory factory in Northenden industrial area of Manchester, for Messrs. Victor H. Iddon, Ltd., 29, Blackfriars-street. Mr. Fred Fowler, architect, Westminster Bank-chambers, Macclesfield:—

*A. Hodkinson, Ltd., 62, Greenhill-street, Greenheys.
Plumber—
*Wm. Cowlishaw & Co.
Carpenter and joiner—
*David Walton & Co., Ltd.
Plastering and painting—
*F. & J. Pilling Bros., Ltd.
(All of Manchester.)

Market Harborough.—New works in St. Mary's-road, for Messrs. K. F. Kirby (Harborough), Ltd., Church-square. Messrs. Coales & Green, architects, 36, High-street:—

Builder—*W. W. Brown & Sons, Market Harborough.
Steelwork and roofing—*E. Wood & Co., Ltd., Manchester.
Paving—*The Groby Granite Co., Ltd., Leicester.

Mickleover (Derbyshire).—Heating and domestic hot-water services from central station to the new parole and convalescent villas extensions to the County Mental Hospital, for the Committee of Visitors. Mr. J. R. Preston, consulting engineer 10, Talbot-mansions, Museum-street, W.C.1. Mr. G. H. Widdows, F.R.I.B.A., County Architect, St. Mary's-gate, Derby:—

*Jerram & Co., Derby £1,726

Newburn.—Installing central heating system and providing hot-water services at the Hall School, for the Northumberland C.C. Mr. W. W. Tasker, County Architect, County Hall, Newcastle-upon-Tyne:—

†Selbourne Domestic & Engineering Co., Ltd., Newcastle-upon-Tyne £274

Newcastle-on-Tyne.—Interior and exterior painting at the Elswick Grange Hospital, for the T.C.:—

*J. Gledhill & Co., 30, Corporation-street, Newcastle 330

Newtown.—Extensions to and alterations of the Newtown County intermediate school, for the Montgomeryshire E.C. Mr. H. Carr, L.R.I.B.A., architect, Min-y-Dre, Salop-road, Welshpool:—

*J. Kendall & Co., Birmingham £7,865

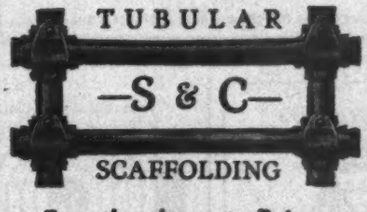
Northumberland.—Erection of the new Northgate Home for Mentally Defectives, for the C.C. Mr. W. W. Tasker, County Architect, Newcastle-on-Tyne:—

General building work including roads and sewers—
*J. G. Green & Sons, Warkworth..... £39,495
Water supply and sewage disposal—
*E. Henderson & Sons, Ponteland..... 13,700
Engineering services including steam, hot and cold water—
*Brightside Foundry & Engineering Co., Ltd., Newcastle 13,483

Nuneaton.—New furnishing department in Abbey-street, for the Co-operative Society, Ltd. Mr. H. N. Jepson, architect, Midland Bank-chambers:—

*G. E. & W. Wincott, Nuneaton.

Having secured the Contract—
What about the Steel Scaffolding!



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Contractors—*W. Higgins.
Reinforced concrete engineers—*Trussed Concrete Steel Co., Ltd., London.

Paisley.—New police offices, etc., at Ralston. Mr. John Coutts, architect, Hunter-street:—

Excavation, brick and mason—*C. Johnstone.
Joinery, carpentry and ironmongery—*W. T. King.
Slater—*Gillespies, Ltd.
Plumber work and sanitary engineering—*Gowdie Bros.
Plaster—*D. S. Lang & Co.
Painter—*W. Osbourne.
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Paisley.—Reconstructions and additions to the Municipal Buildings, for the Corporation. Mr. James Lee, architect, Municipal Offices. Messrs. Murray, Burnie & Hutton, measurers, High street:—

Excavation, brick and mason—*J. Crawford.
Joinery, carpentry and ironmongery—*J. Clarke & Co.
Plumber work and sanitary fittings—*J. Patison.
Plaster—*D. S. Lang & Co.
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Prescot.—Church hall in Chapel-lane, Eccleston, for the Parochial Council of Christ Church. Messrs. Gornall & Wainwright, L.R.I.B.A., architects, Britannic House, 3, Hardshaw-street, St. Helens:—

*J. Lucas & Son, Ltd., Prescot.

Prestwich.—18 houses off Rectory-lane, for the U.D.C. Mr. Handel Kay, engineer and surveyor:—

Builders—*J. Berry, Ltd., Heywood.
Electrician—*L. Hilton, Prestwich.
Slating—*Beaumonts (Manchester), Ltd., Manchester, 14.

Rochdale.—Extensions to Castleton Baths, for the T.C. Mr. S. H. Morgan, Borough Surveyor:—

*J. Mann (New Hey), Ltd., Milnrow, near Rochdale.

Rogiet (Mon.).—20 houses, with roads and sewers, for the Great Western (Severn Tunnel Junction) Garden Village Society, Ltd. Mr. T. Alwyn Lloyd, F.R.I.B.A., architect, 6, Cathedral-road, Cardiff:—

	Houses.	Roads and Sewer.
H. J. Herbert & Co., Newport	£8,970	... £575
J. H. Preece, Newport	7,700	... 635
T. E. Evans, Langstone	7,670	... 525
D. J. Rees, Monmouth	6,960	... 550
*W. & H. W. Bate, Newport	6,395	... 417
F. C. Parfitt, Newport (withdrawn)	6,150	... 250

Sheffield.—316 houses comprised in Building Scheme No. 2, Shirecliffe estate, for the T.C. City Architect:—

50 houses—			
*W. Memmory & Sons, Ltd.	£15,361	11	0
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*W. Malthouse, Ltd.	17,259	4	5
40 houses—			
*M. J. Gleeson, Ltd.	12,763	7	6
172 houses—			
*Melling Bros., Ltd.	55,751	0	0

Stockport.—New block of workshops, mortuary at the Shaw Heath Institution, for the Corporation. Messrs. P. Peirce & Son, architects, 30, St. Petersgate:—

†H. Bardsley & Sons, Ltd., Stockport.

Stockton-on-Tees.—New R.C. school on the Ragworth estate, Norton. Mr. A. Harrison, architect, High-street:—

*J. C. Watson, Prudential-buildings, Stockton.
(Cost £3,960.)

Stranraer.—Elementary school, for the C.C. Mr. R. G. Logan, County Architect:—

Reinforced concrete work—*Alexander A. Stuart & Co., Ltd.
Reinforced concrete engineers for the floors—*Trussed Concrete Steel Co., Ltd., London.

Stretford.—Warehouse and flour mill in Skerton-road, for the British Arkady Co., Ltd. Mr. F. Fowler, architect, Westminster Bank-chambers, Chestergate, Macclesfield:—

Builders—*Wm. Thorpe & Son, Ltd.
Steelwork—*Banister, Walton & Co., Ltd.
Plumbing—*J. Jaffrey.
Patent stone—*Concrete Unit Co., Ltd.
Painting—*Charles Bell.
Plastering—*J. & A. Hart.
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Swaffham.—Three cottages in one block in the parish of Saham Toney, for the R.D.C. Mr. W. H. Edwards, surveyor, Watton:—

W. T. Lubbuck, Norwich	£936	9	0
O. Staines & Son, Swaffham	920	0	0
E. J. Tofts, Attleborough	831	0	0
*S. Tennant & Sons, Watton	750	18	6

Walsall.—Two new wards at the Manor Hospital, for the T.C. Mr. J. Taylor, Borough Engineer:—

*Deacon & Boardman, Ltd., Walsall ... £697

Warwick.—12 houses, for the R.D.C.:—

*Harrison Bros., Redditch £4,504
(Subject to M.H. approval.)

Whitby.—Additions to the Mount Council school, for the North Riding E.C. County Architect, Northallerton:—

*C. Hebditch, West-road, Whitby £2,038

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Wakefield.—Houses, for the R.D.C. Mr. W. E. Massie, engineer and surveyor:—

12, at Crigglestone—

Builders—	
*J. Marshall & Son, Crigglestone, near Wakefield	£1,183
Joiner—	
*G. T. Turvey	574
Plumber—	
*N. Hancock	333
Tiler—	
*J. Ives	239

12, at Crofton—

Builder—	
*J. W. Abbott, Sharlston	1,183
Joiner—	
*G. T. Turvey	574
Plumber—	
*N. Hancock	333
Tiler—	
*J. Ives	239

12, at Walton—

Builders—	
*J. W. Abbott	1,207
Joiner—	
*G. T. Turvey	574
Plumber—	
*N. Hancock	333
Tiler—	
*J. Ives	239

16, at Warmfield—

Builders—	
*C. H. Clark & Son	1,530
Joiner—	
*G. T. Turvey	766
Plumber—	
N. Hancock	444
Plasterer—	
*R. H. Lockwood, Horbury	147
Tiler—	
*J. Ives	318

12, at Middlestown—

Builders—	
*C. H. Clark & Son, Middlestown	1,132
Joiner—	
*G. T. Turvey	574
Plumber—	
*N. Hancock	333
Tiler—	
*J. Ives	239

12, at Netherton—

Builders—	
*C. H. Clark & Son	1,132
Joiner—	
*G. T. Turvey	574
Plumber—	
*N. Hancock	333
Tiler—	
*J. Ives	239

12, at Kirkhamgate—

Builder—	
*C. H. Clark & Son, Middlestown	1,147
Joiner—	
*G. T. Turvey	574
Plumber—	
*N. Hancock	333
Tiler—	
*J. Ives	239

(Remainder of Wakefield.)

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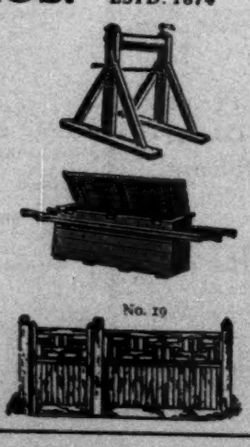
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